Castlecomer Local Area Plan

Amended Environmental Report

Kilkenny County Council

December 2008

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Amended Environmental Report

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1. Non-technical Summary

1.1.1 Strategic Environmental Assessment (SEA) provides a qualitative appraisal of the environmental effects of a plan and adds to the transparency of the process involved in selecting the preferred plan strategy as well as improving the sustainability of decisions taken.

1.1.2 This is the non technical summary of the SEA Environmental Report associated with the Draft and Proposed Amendments of the Castlecomer Local Area Plan. The purpose of the summary is to ensure that key issues and findings of the Environmental Report are readily understood by decision makers and the general public.

SEA Process

1.1.3 This Environmental Report is the third output from the SEA process which is running in parallel with the preparation of the Plan. The previous stages of the SEA, included the preparation of a **Scoping Report** which, identified key environmental issues in the town, and an **Environmental Repor**t associated with the Draft Plan which set out the likely significant effects of the plan with a view to influencing the choice of strategy and setting out any mitigation measures needed to offset potential adverse effects.

1.1.4 This document is the Environmental Report associated with the Proposed Amendments. As well as inviting members of the public to comment on Proposed Amendments, comments are also welcome on the Environmental Report.

1.1.5 Following the making or amendment of the Plan, a **SEA Statement** will be prepared which summarises how the environmental considerations have been integrated into the plan.

How the Plan is assessed

1.1.6 The Directive requires the consideration of reasonable alternatives taking into account the objectives and geographical scope of the plan and the significant environmental effects of the alternatives selected.

1.1.7 In order to assess the effects of alternatives, the Draft Plan and the Proposed Amendments a set of environmental objectives against which the plan options can be systematically assessed was developed with reference to environmental issues facing the town.

Environmental Issues

1.1.8 Castlecomer is currently facing a number of environmental issues. These include:

- Poor river water quality
- Inadequate supply of water
- The replacement of natural and semi-natural habitats resulting from development on greenfield sites
- Areas liable to flooding
- Potential effects on designated and non designated biodiversity sites
- A higher reliance on private transport with subsequent impacts on air quality and emissions
- The loss of soil from new development
- Impacts on landscape quality from possible development of upland areas;

- Possible impacts on areas of archaeological potential, structures on the record of protected structures and national inventory of architectural heritage
- Areas where there is a extreme and high levels of groundwater vulnerability

The Plan Alternatives

1.1.9 The SEA considered three alternative options for the development of Castlecomer for the next six year period. The three options considered are:

- **Alternative 1**: Development within the existing town boundary and continuation of existing policies with no new strategies or measures. Consideration of this option (do nothing) satisfies the SEA Directive (Annex I (b) of the Directive);
- **Alternative 2**: Development outside the town boundary to the west of the town representing a high level of growth for the town with no demand restraint as to the level or location of new zoning.
- **Alternative 3**: Changes to some zoning designations within the town centre and expansion of the town boundary to the south of the town.

Comparison of Alternatives

1.1.10 The environmental effects associated with Alternative 1 would reinforce the existing trends with environment issues facing the environment likely to worsen. Without consideration of more detailed policies and controls that would potentially be associated with all development scenarios, the significance of the environmental effects concerning these issues is more likely as quantum of development increases. Alternative 2 which proposes the highest quantity of new development is least favourable. Alternative 1 which providing for the least amount of additional zoning is the least damaging outcome however does not provide for the needs with respect to the growing population. Alternative 3 proposes some additional zoning that reflects the reasonable development requirements of the town during the Plan period.

Emergence of a Preferred Plan Strategy

1.1.11 Alternative 3 would be the most appropriate alternative for the plan and is the preferred strategy. Whilst this strategy proposes some additional zoning, it is based on the needs generated by population growth within the town over the next six years.

Appraisal of the Draft Plan and Proposed Amendments

1.1.12 The Draft Plan and more recently, the proposed amendments, were assessed against the environmental objectives. A cumulative effect[1] assessment was also undertaken and mitigation measures suggested as to how the plan might be improved.

1.1.13 The significant effects of the Draft Plan include:

- Reduction in water quality (this will depend on the provision of additional waste water treatment facilities);
- Inadequate capacity of drinking water capacity which may constrain new development;

[1] Cumulative effects have been defined as 'the net result of environmental impacts from a number of projects and activities' Sadler, 1996)

- Development on Greenfield sites may result in the loss of soil and the replacement of natural and semi-natural habitats with artificial surfaces;
- Where development is in close proximity to the Kings River or within areas known to be prone to flooding, it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Potential to impact on the quality of groundwater due high levels of groundwater vulnerability
- A higher reliance on private transport with subsequent impacts on air quality and emissions;
- Impacts on cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures, national inventory of architectural development and national monuments;
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings.
- Depending on the height and form of new buildings, a negative impact on townscape quality and cultural heritage.

Assessment of Proposed Amendments

- Use of greenfield site with potential impacts on natural features such as hedges and trees, soil quality through surface water run off
- Increase hard standing resulting in additional volume of surface water run off
- Visual impact
- Overall increase in traffic generation from development at out of centre locations and associated implications for air quality
- Increase volume of traffic arising from development on the Athy Road
- Potential adverse effect on groundwater quality
- Possible negative effects on landscape in the Castlecomer Demesne.

Proposed Mitigation Measures

1.1.14 The appraisal resulted in a number of proposed mitigation measures with respect to the effects associated with the Proposed Amendments. It is considered that the performance of the preferred plan strategy and policies will be enhanced through the implementation of a range of mitigation measures.

Monitoring

1.1.15 Monitoring is a fundamental part of the SEA process and the Environmental Report contains a set of performance indicators and targets that will be used by the Council to monitor the progress in delivering environmental objectives.

2. Introduction

2.1 Background

2.1.1 In October 2007, Colin Buchanan (CB) were appointed to prepare the Local Area Plan (the Plan) for the town of Castlecomer which will replace the existing LAP prepared as part of the Kilkenny County Development Plan in 2002. The Local Area Plan has been developed to reflect the emerging County Development Plan, due for adoption in June 2008. The purpose of the LAP will be to manage growth and development of the town over a six year plan period to 2014 and will comprise the statutory land use plan for the town providing for the proper planning and sustainable development of the area in accordance with the Planning and Development Act 2000.

2.1.2 CB, on behalf on the Kilkenny County Council were also requested to produce an Environmental Report in compliance with the SEA Directive (2001/42/EC) and related government guidelines to accompany the Draft LAP. This document is Environmental Report associated with the Draft Castlecomer Local Area Plan.

2.2 Strategic Environmental Assessment

2.2.1 The purpose of Strategic Environmental Assessment (SEA) is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out for certain plans and programmes which are likely to have significant effect on the environment.

2.3 Purpose of the Environmental Report

2.3.1 The primary purpose of the SEA is to set out the likely significant effects of the plan with a view to influencing the choice of strategy and setting out any mitigation measures needed to offset potential adverse effects. The Environmental Report is central to the SEA process, forms part of the plan documentation and should be read along side the Proposed Amendments to the Plan which are currently on display. As well as inviting members of the public to comment on the Proposed Amendments comments are also welcome on the environmental report.

Next Stages

2.3.2 Following the making of the Plan, a statement will be prepared which summarises

- how the environmental considerations have been integrated into the plan
- how the environmental report and the outcome of consultations were taken into account
- the reasons for choosing the plan or amendment as adopted in light of other reasonable alternatives dealt with
- the measures decided upon to monitor, in accordance with Art 14J, the significant environmental effects of the implementation of the plan or amended plan.

2.4 Habitats Regulations Assessment / Appropriate Assessment

2.4.1 The main aim of the Habitats Directive is to promote biodiversity by defining a common framework for the conservation of wild plants and animals and habitats of community interest. Member States are obliged to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

2.4.2 A recent European Court of Justice Ruling against Ireland (Case 418/04 EC Commission v Ireland) relates to Ireland's transposition and implementation of the Birds Directive 79/409/EEC, as well as its implementation of relevant articles of the Habitats Directive 92/43/EEC.

2.4.3 A DOEHLG circular letter, SEA 1/08 & NPWS 1/08 (dated 15/02/08), refers to the implications of this ruling and sets out the requirement for any draft land use plan (or amendment/variation) to be screened for any potential impacts on areas designated as Natura 2000 sites[2]. If as a result of this screening significant effects are deemed likely, an appropriate assessment of the ecological implications of any plan or project, whether within or outside a designated site, will also be required.

2.4.4 An appropriate assessment with respect to the Castlecomer Local Area Plan has been produced and is available as a separate document. The recommendations arising from this report have been taken into account during the preparation of the Proposed Amendments.

2.5 Interaction of the Plan with higher level plans

2.5.1 The Local Area Plan is being prepared under the provisions of the Planning and Development Act 2000-2006 and will form part of the statutory planning framework. The Plan is situated at the lowest level of the planning hierarchy and does not influence subsequent plans, with the exception of non statutory masterplanning exercises that may be required during the plan period.

2.5.2 The hierarchy of land-use plans, central to plan making process, means that certain strategic issues in the Plan may already have been determined at national, regional and County level. It is therefore appropriate for the level of detail to vary according to the scale of the plan and the position of Local Area Plans within the hierarchy means that a greater level of detail is normally required.

2.5.3 The Kilkenny County Development Plan 2008 -2014 will be the overarching policy document for all areas within the county's administrative boundary and sets out the objectives and policies of Kilkenny County Council. The LAP is required to be consistent with the objectives of this plan.

[2] "Natura 2000" sites comprises special areas of conservation (SAC) designated by Member States in accordance with the provisions of the Directive, and special protection areas (SPA) classified pursuant to Directive 79/409/EEC on the conservation of wild birds (the 'Birds Directive').

3. SEA Methodology

3.1 Introduction

3.1.1 The SEA methodology reflects the requirements of the SEA Directive and Irish SEA Regulations and follows a set process.

3.2 SEA Process

3.2.1 The SEA process comprises the following stages:

- Stage 1 Screening of Plans and Programmes
- Stage 2 Scoping the SEA
- Stage 3 Identification, Prediction, Evaluation and Mitigation of Potential Impacts
- Stage 4 Consultation, Revision and Post-Adoption Activities.

Stage 1 - Screening of Plans and Programmes

3.2.2 A screening exercise was completed in March 2008, which determined that the completion of a Strategic Environmental Assessment was appropriate. This exercise was undertaken using the Schedule 2A - 'Environmental Significance Screening Criteria' and highlighted a number of existing environmental issues relevant to the Castlecomer Local Area Plan. It also triggered a number of the environmental significance criteria, particularly in relation to its close proximity to a Special Area of Conservation.

3.2.3 A copy of this decision was made available for public inspection at Kilkenny County Council, County Hall, John Street, Co Kilkenny and the relevant environmental authorities (EPA and DoEHLG) were notified.

3.2.4 In accordance with the regulations, where significant effect on the environment are likely, prior to giving notice under section 20(3) of the Act, an environmental report of the likely significant effects on the environment of implementing the Local Area Plan should be prepared.

Stage 2 – Scoping the SEA

3.2.5 Prior to producing this Environmental Report, a scoping report was completed and consultation with statutory consultees undertaken. The purpose of scoping stage is to develop an understanding of the environmental media that may be affected provide information on sensitivities, constraints and threats in relation to the receiving environment to and to set a framework for identifying and evaluating the impact of the LAP. It determines the key elements of the Local Area Plan to be assessed and pinpoints the key issues that the Environmental Report should focus on.

3.2.6 The production of a scoping report is not a formal requirement of SEA Directive but is recommended as good practice. It was issued prior to the production of the Draft LAP and informs stakeholders about the key environmental issues, the key elements of the LAP and alternatives within the LAP. However, the central purpose of the report is to provide a basis for consultation with statutory and non statutory consultees. Scoping consultation took place over a four week period between 16th May – 16th June. Responses were received from

3.2.7 CB / Kilkenny County Council consulted with the following statutory consultees

during the screening and scoping stages of the SEA process:

- Tadhg O'Mahony, Environmental Protection Agency, Regional Inspectorate, Inniscarra, Co. Cork.
- The Manager, Development Applications Unit, Department of the Environment, Heritage & Local Government, Dun Sceine, Harcourt Lane, Dublin 2.
- Dearbhala Ledwidge, Heritage Officer, Kilkenny County Council

Stage 3 - Environmental Report

3.2.8 The Scoping Report was followed by the production of an Environmental Report which was on public display with the Draft Plan for a period of six weeks. Table 3.1 sets out the consultation responses received. The Manager's Report details how these comments influence the Proposed Amendments.

Table 3.1: SEA Consultation Reponses

Submission Reference	Summary
DCC4 Department of Communications, Energy and Natural Resources	Submission made with reference to Local Area Plans for Callan, Castlecomer, Graiguenamanagh and Thomastown. Submission sets out the following two views: ▪ In terms of the protection of water quality and fishery status of the receiving waters, the status objectives as set out in the Water Framework Directive should not be compromised as a result of these LAPs. ▪ It is this Department's view that any future development proposed on foot of these LAPs should be considered premature until suitable Sanitary Services infrastructure (incl. Treatment Plant Capacity) is in place to take and treat satisfactorily the anticipated increased loadings (both organic and hydraulic) that are expected as a result of the population increases projected in these LAPs.
DCC14 Environmental Protection Agency	Submission made with regard to the Environmental Report placed on display with the Draft LAP, including: ▪ Information on consultation taken place ▪ Descriptions of the "do nothing" scenario ▪ Clarification on full range of likely effects ▪ Clarification on mitigation measures ▪ Additional information with regard to monitoring measures
DCC19 Development Applications Unit, The Department of the Environment, Heritage & Local Government	The submission from the DoEHLG notes policies in the Draft LAP which are relevant to the cSAC. The submission also comments on the Environmental Report and appropriate assessment screening, noting the findings of each. The submission requests that any consultation letters and the completed appropriate assessment (when completed) be forwarded to the DoEHLG.

3.2.9 An assessment in the context of environmental protection objectives, of the Proposed Amendments has now been included within this report. This Environmental Report includes the identification, prediction, evaluation and mitigation of potential impacts of the proposed strategy.

Assessment methods (including difficulties)

3.2.10 The assessment has been completed through the use of matrices which assesses LAP Policies against SEA Objectives. Potential effects have been categorised as

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

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

Significant Effects

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

Cumulative Effects

3.2.13 Cumulative effects arise where several developments each have insignificant effects but together have a significant effect; or where several individual effects of a Local Area Plan (e.g. noise, dust and visual) have a combined effect. Examples of cumulative, secondary and synergistic effects include loss of tranquility, changes in the landscape, economic decline and climate change. These effects are very hard to deal with on a project-by-project basis through EIA. It is at the SEA level that they are most effectively identified and addressed.

3.2.14 Assessment of cumulative effects should

- focus on identifying the total effect of both direct and indirect effects on receptors. Receptors may include natural resources (e.g. air, water, soil), sections of the population (e.g. people living in particular areas or vulnerable members of the community) or ecosystems and species (e.g. heathland);
- be considered in relation to the nature and extent of the receptors, such as ecosystems and communities, rather than administrative boundaries;
- to be considered in relation to effects of policies within a plan and those which may result from interaction with the effects of other plans and programmes; and
- to take account of how close the plan, in association with other past, present and likely future actions, will bring the receptors to their capacity/threshold to remain productive or sustainable.

Difficulties encountered

3.2.15 The SEA Directive also requires that difficulties in assessment should be acknowledged so that decision-makers, the environmental authorities and the general public are made aware of such difficulties.

3.2.16 Difficulties identified during the collection of baseline data and the subsequent assessment of environmental effects includes:

- Gaps in information
- Lack of availability of information

3.2.17 Chapter 5 further outlines specific difficulties encountered with data collection in relation to each environmental receptor.

Stage 4 - Consultation, Revision and Post-Adoption Activities.

3.2.18 Should the planning authority decide to further amend the draft local area plan, the environmental report will be amended to reflect these changes and set out the likely significant effects on the environment of implementing the proposed variation or modification. The proposed amendment and associated environmental report will then be made available for further inspection for a period of 4 weeks.

3.2.19 Following the making or amendment of the local area plan, a **SEA statement** will be prepared which summarises

- how the environmental considerations have been integrated into the plan
- how the environmental report how submissions and observations made to the planning authority have been taken account during the preparation of the amended plan,
- the reasons for choosing the plan or amendment as adopted in light of other reasonable alternatives dealt with
- the measures decided upon to monitor, in accordance with Art 14J, the significant environmental effects of theimplementation of the plan or amended plan.

4. Contents and Objectives of the Local Area Plan

4.1 Introduction

4.1.1 Castlecomer is district town located in County Kilkenny of approximately 1,614 (2008 estimate) people and situated 12 miles north of Kilkenny city in North-East County Kilkenny. The N78 National secondary route links the town with Kilkenny City, Athy and Dublin.

4.1.2 In the most recent Census in 2006, Castlecomer's population was recorded as 1,531 representing 3% growth in the town since 2002. The town's main function is as a service centre for a densely populated rural hinterland.

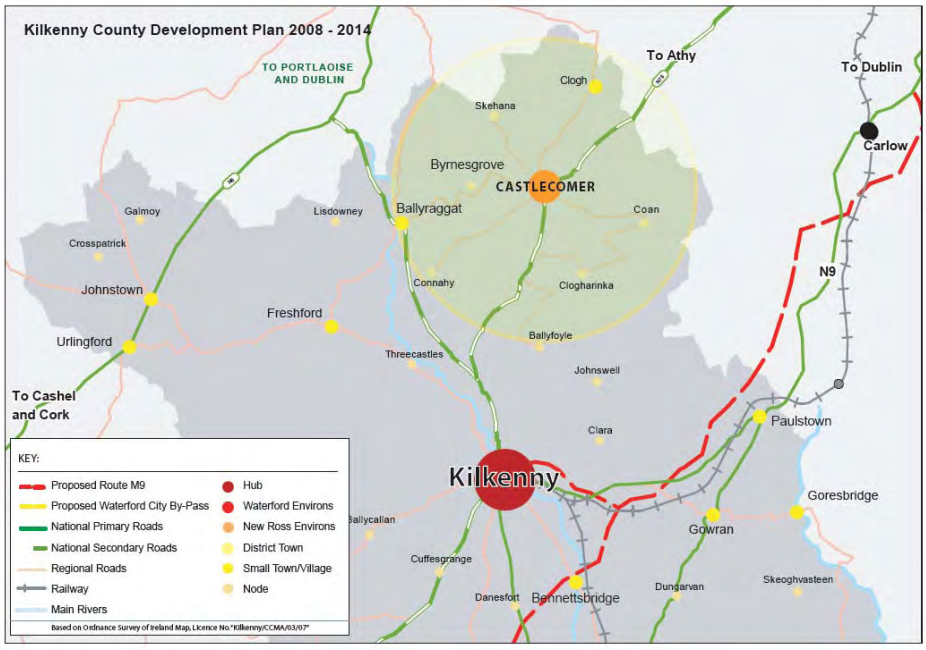

Figure 4.1: Kilkenny County Development Plan, Development Strategy

4.2 The purpose of the Castlecomer Local Area Plan

4.2.1 The Castlecomer Plan provides a written statement of development policy and objectives to manage the development and growth of Castlecomer over a six year plan period. The Plan will replace the existing LAP which was adopted in 2002 and will manage the growth and development of the town for six years from the date of its adoption by the Council, or until the plan is varied or a new plan is made.

4.2.2 The Plan has been prepared in accordance with the requirements of the Planning and Development Act 2000 (as Amended 2002 and 2006) to set out an overall strategy for the proper planning and sustainable development of the Castlecomer town. The purpose of the Plan is to set out the overall strategy for the proper planning and sustainable development of Castlecomer town and

to comprise the statutory land use plan for the town in the promotion and regulation of development. In doing so it provides a clear vision for Castlecomer, providing for the needs of the existing and future population.

4.2.3 Local area plans also have a key role in translating overarching County development plan policies and objectives at the local level.

Content of the Draft Plan

4.2.4 The development of a vision, plan objectives and development strategy for future of Castlecomer have been development to reflects the unique characteristics and issues facing the town in addition to the policy context set at national, regional and county level.

Plan Objectives

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

- To support town centre vitality and viability by extending the town centre;
- To provide high quality residential areas with direct linkages to open space, community and retail facilities;
- Address existing deficits within the recently established developments and provide for future community requirements in childcare, retail, open space and community services in the Castlecomer area;
- Protect and enhance the character and integrity of existing natural and built environments;
- Facilitate sustainable economic development through support for tourism development and provision of a new industrial area to the south of the town;
- Improve linkages between the town and the Castlecomer Demesne;
- Support the re use of land and buildings, particularly though backland development; and
- To seek a high level of design quality in all new development.

Vision

4.2.6 The Draft Castlecomer Local Area Plan includes the following vision for the town in 2020:

> *"To provide a planning framework which promotes the conservation of Castlecomer's natural and built heritage, unique upland setting, consolidates the town within the existing plan boundary making more efficient use of land and existing infrastructure, facilitating the sustainable growth and development of the town through the creation of high quality and permeable developments."*

Zoning Objectives

4.2.7 The Plan has considered the requirements for a range of land uses in the town including residential, industrial, open space, community facilities and general business that reflects the projected population growth in the town.

Relationship of the Local Area Plan with other relevant plans and programmes

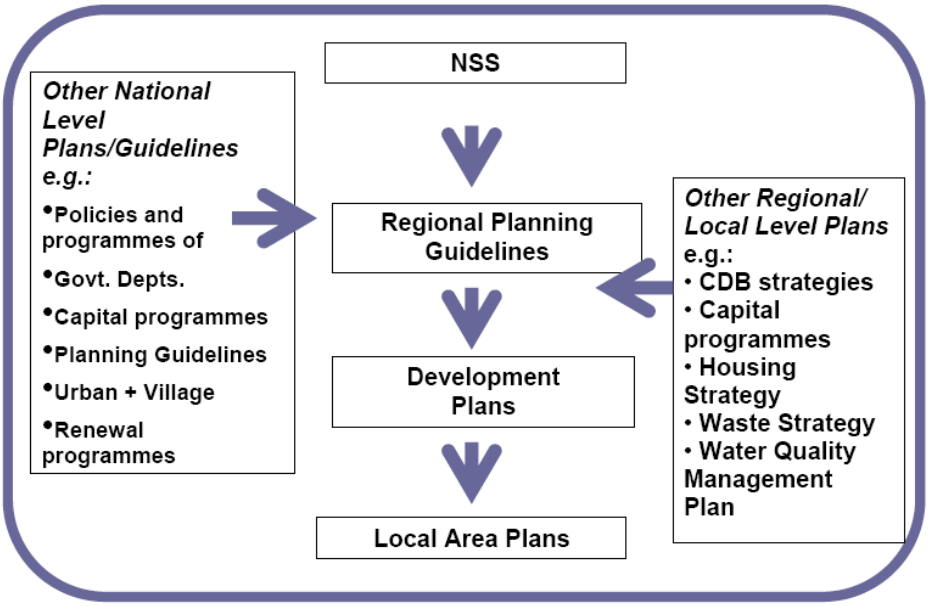

Figure 4.1: Links with other plans in the hierarchy

4.3 International

4.3.1 **Agenda 21 (1992)** was the main product of the UN Conference on Environment and Development held in Rio de Janeiro in 1992, which endorsed the concept of sustainable development. This required, inter alia, that environmental protection should constitute an integral part of the development process; the precautionary approach should be applied; that public access to environmental information and participation in decision-making should be facilitated; and that EIA should be undertaken for activities likely to have a significant environmental impact.

4.3.2 **Kyoto Protocol (1997)** commits the developed world to begin taking real action to combat climate change. Industrialised countries have agreed legally binding targets to reduce their combined greenhouse gas emissions by at least 5% (compared to 1990 levels) by 2012.

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

4.4 European

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

4.4.2 **EU Birds Directive (79/409/EEC)** transposed into Irish law through the EU (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), requires the designation of Special Protection Areas (SPAs) for: (a) listed rare and vulnerable species (b) regularly occurring migratory species (such as ducks

and geese) (c) wetlands, especially those of international importance, which attract large numbers of migratory birds each year.

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

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

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

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

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

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

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

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

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

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

4.4.13 Member States must draw up maps identifying all areas posing a risk of flooding and indicating the probability (high, medium or low) of flooding for each of those

areas and the potential damage for local populations, property and the environment by 2013. Flood risk management plans will be prepared for each river basin district by 2015 and will focus on reducing the probability of flooding and the potential consequences of flooding.

4.5 National

4.5.1 **The National Spatial Strategy (2002)** is based on the principles of sustainable development, and includes policies on environmental quality.

4.5.2 **Sustainable Development: A Strategy for Ireland (1997)** compiles of sectoral objectives, many of which are of potential relevance to land-use planning.

4.5.3 **Making Ireland's Development Sustainable: A review** of Ireland's 1997 Strategy for Sustainable Development and was published in advance of the World Summit on Sustainable Development in Johannesburg in 2002.

4.5.4 **National Climate Change Strategy (2007-2012)** Some of the principal measures outlined in this Strategy relate to:

- 15% of electricity to be generated from renewable sources by 2010 and 33% by 2020
- Support for Combined Heat and Power projects
- Bioheat and CHP programmes
- Biomass heating in schools
- Adaptation to climate change including flood risk

4.5.5 Adaptation as well as mitigation reducing green house gas emissions is a key element of the policy response to climate change with the objective of reducing vulnerability to climate change, thereby reducing its negative impacts.

4.5.6 Climate change-associated trends as evident in the meteorological and ecological records include

- increasing average temperature;
- changes in rainfall patterns and a lengthening of the growing season.

4.5.7 The strategy highlights Local Authorities power to consider adaptation initiatives in relation to their development plans. The Planning and Development Act 2000, empowers planning authorities to provide, in their development plans, that development in areas at risk of flooding may be regulated, restricted or controlled. If development is proposed in a flood-risk area, the risk of flooding can be carefully evaluated and planning permission refused, if necessary. As part of a comprehensive policy position on climate change, the Government is committed to developing a national adaptation strategy over the next two years.

4.5.8 More recently, in Jan 2008, a 20 per cent emissions' reduction target has been set by the European Commission.

4.5.9 **National Biodiversity Plan (2002)** was prepared in response to the UN Convention on Biological Diversity, covers the three levels at which biodiversity may be considered, namely ecosystem diversity, species diversity and genetic diversity. The overall objective is to secure the conservation, including where possible the enhancement, and sustainable use of biological diversity in Ireland and to contribute to conservation and sustainable use of biodiversity globally.

4.5.10 **National Heritage Plan (2002):** Relates to heritage generally and forms the

basis of a coordinated strategic approach to the protection and management of heritage up to 2007.

4.5.11 **Framework and Principles for the Protection of the Archaeological Heritage (1999)** seeks to ensure compliance with the 1992 European Convention on the Protection of the Archaeological Heritage by setting out the archaeological policies and principles which all public bodies should apply when undertaking or authorising development.

4.5.12 **National Development Plan 2007 – 2013, Transforming Ireland, A Better Quality of Life for All** focuses investment over the life of the plan's strategy on the following strategic policy goals. Specifically:

- Regional Development;
- Rural Economy;
- All-Island Co-operation;
- Environmental Sustainability; and
- Social Inclusion.

4.5.13 For the purposes of Regional Development, the NDP seeks to assist and enhance physical and spatial planning and ensure that future spatial development is structured in a manner that is internationally competitive, socially cohesive and environmentally sustainable. To achieve this investment will support five key areas:

- More efficient Greater Dublin Area
- Strong Gateways in other Regions
- Hubs
- County and other town structure
- Vibrant and diversified rural areas

4.5.14 **Managing Ireland's Rivers and Lakes: A Catchment-Based Strategy Against Pollution (1997):** This document sets out a strategy to protect water quality against pollution by phosphorus from all sources.

4.5.15 **Report of the Flood Policy Review Group (OPW, 2007)** includes a number of key recommendations with respect to national flood policy and compliance with Directive 2007/60/EC on the assessment and management of flood risks (see above). The recommendations of the review groups include:

- Future policy should seek to minimise the national level of exposure to flood damages through the identification and management of existing, and particularly potential future, flood risks in an integrated, proactive and river basin based manner;
- The Office of Public Works is to be the lead agency in delivering this policy;
- The production of River Basin Flood Risk Management Plans (RBFRMPs);
- The production of ill play an advisory role in the area of general planning and development control through the development of standards and guidelines in conjunction with DoEHLG and local authorities for inclusion in Development Plans; and
- Comprehensive Flood Hazard Maps be developed and made available.

4.6 Department of Environment, Heritage and Local Government: Guidelines for Planning Authorities

4.6.1 **Development Plans Guidelines for Planning Authorities (2007)** have a number of key messages to have regard to the preparation of Development Plans. These include the requirement for development plans to;

- Anticipate future needs on an objective basis:
- Protect the environment and heritage:
- Provide a framework within which sustainable development can be
- achieved:
- Be consistent between plans and strategies at different levels:
- Address diverse community needs
- Engage the community and engender ownership from key stakeholders in order to secure effective implementation.

4.6.2 **Residential Density (1999)** encourages increased densities particularly in town and city centres, "brownfield" sites, inner suburban/infill sites, outer suburban/ "greenfield" sites, institutional lands, and in towns and villages, subject to appropriate design criteria.

4.6.3 **Retail Planning (2000):** Policy objectives include:

- promoting forms of development which are easily accessible, particularly by public transport
- supporting the continuing role of town and district centres.

4.6.4 **Sustainable Residential Development in Urban Areas (Feb, 2008)** sets out the key planning principles which should be reflected in development plans and local area plans in order to guide sustainable residential development in urban areas. Local planning authorities should have regard to these guidelines and recommended standards for new residential development when preparing Local Area Plans.

4.6.5 In pursuit of successful and sustainable residential development in urban areas, the guidelines outline specific qualities that places should seek to incorporate. New residential development should:

- Prioritise walking, cycling and public transport, and minimise the need to use cars;
- Deliver a quality of life in terms of amenity, safety and experience;
- Provide a good range of community and support facilities, where and when they are needed;
- Present an attractive and well maintained appearance, with a distinct sense of place and a quality public realm;
- Are easy to access and to find one's way around;
- Promote a mix of land uses to minimise transport demand;
- Promote social integration and provide accommodation for a diverse range of household types and age groups; and
- Enhance and protect the built and natural heritage.

4.6.6 The guidelines provide specific recommendations for the role of Local Area

Plans with the need to address the following issues at the beginning of the plan making process;

- The amount and type of new housing required to meet the needs of the area;
- The need to adopt a sequential approach to the zoning of residential lands extending outwards from the centre of an urban area
- The relationship and linkages between the areas to be redeveloped and the new areas including the availability of community facilities – social infrastructure
- The need to create an overall urban design framework for redevelopment areas
- The setting of appropriate density levels
- Adapting to the impacts of climate change
- The avoidance of flood risk

4.6.7 More specifically residential development small towns with a population ranging from 400 – 5,000 should be plan led and should contribute to the creation of a compact urban structure with a view to increasing the levels of accessibility and making efficient use of infrastructure and services. Central to this approach will be the reuse of town centre sites and underused backland areas.

4.6.8 Scale of development is also important for smaller settlements of this size. New development should be in proportion to the size of the existing settlement with a preference for a number of smaller sites integrated within and throughout the urban centre rather than focusing on one very large site. In terms of quantum, it is generally preferable that individual residential proposals should only increase the housing stock of such urban areas by a maximum of 10% - 15% during the plan period.

4.6.9 **Environmental Report On The Strategic Environmental Assessment Of The Draft Kilkenny County Development Plan 2008-2014** The Environmental Report of the Kilkenny County Development plan makes a number of recommendations with respect to Local Area Plans. It suggests that Local Area Plans should

- contain adequate policy and guidance in order to highlight the importance of retaining the unique character and diversity of town centres and provide for their protection;
- take account of the carrying capacity of the environment;
- Prioritise and target the use of brownfield sites;
- Promote infill development and consolidation of existing towns to reduce the need to zone additional greenfield lands;
- Include stringent design requirements and environmental protection;
- Include policies on the integrated provision of infrastructure.

5. Baseline Environmental Characteristics

5.1 Introduction

5.1.1 In order to assess the environmental effects of the LAP it is necessary to understand the present state of the environment (the baseline environment) of Castlecomer. In particular, aspects of the environment that are currently experiencing plan-related problems or are likely to be significantly affected by the implementation of the LAP should be highlighted at this stage so that potential future impacts can be more accurately assessed.

5.2 Biodiversity, Flora and Fauna

Existing Environmental Information

5.2.2 The Convention of Biological Diversity affirms the importance of conserving biological diversity or biodiversity which refers to the variety of life within an area or as defined by the convention the *"variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".*

5.2.3 The terms 'Flora' and 'Fauna', respectively, refer to all aquatic and terrestrial plants that occur in the wild including lichens, mosses, liverworts, fungi, algae and vascular plants and all aquatic and terrestrial wild birds and animals, in particular wild mammals, reptiles, non-aquatic invertebrate animals and amphibians, fish species and aquatic invertebrate animals that are specified in regulations under Section 23 of the Wildlife Act (1976).

5.2.4 The reduction in biodiversity is important in its own right but can also generate secondary impacts. For example, vegetation damage or removal can lead to:

- Loss of visual and noise barriers, decline in landscape character and the context of amenity areas, heritage sites and buildings
- Loss of slope and soil stability and enhanced runoff with consequent impacts such as flood hazard and riverine sedimentation

Areas Of Scientific Interest

5.2.5 Areas of scientific interest occurring locally include the Castlecomer Estate Woodland. Areas of Scientific Interest were first identified by An Foras Forbartha in their 1970 National Heritage Inventory. In more recent years the NHA designations have replaced this old system of Areas of Scientific Interest which provided no protection under legislation. Although these areas have no legislative protection they are recognised and protected under the current County Development Plan.

Natura 2000 sites

5.2.6 Special Areas of Conservation (SACs), together with Special Protection Areas (SPAs), form a Natura 2000 network of protected areas throughout the EU. There are 8 sites in County Kilkenny designated and protected under the under the Habitats Directive 1992 (92/43/EEC). They have been designated as SACs due to their conservation value for habitats and species of importance in the European Union. Part of the River Barrow & River Nore SAC is located within

the town boundary (See **Figure 5.1**) and Areas of High Amenity also exist towards the north east of the town and Castlecomer Demesne.

Figure 5.1: River Barrow and River Nore SAC (NPWS, 2008)

Non Designated biodiversity and flora and fauna

5.2.7 The undeveloped areas of Castlecomer are primarily characterised by agricultural grasslands comprising of fields bordered by hedgerows and backland areas which contribute to the overall levels of biodiversity in the town. Large mature trees are also dotted throughout the landscape and found in larger numbers within the Castlecomer Estate and the deciduous woodland, Sawneys Wood which bisects Castlecomer Golf Club.

Sawney's Wood

5.2.8 A tree preservation order currently applies to an area of Sawney's Wood (T.P.O. 1/67 - See **Figure 5.2**). It comprises of 41 individual trees, four tree groupings and an area of specified woodland. The trees comprise a mixture of deciduous trees and conifers with species including beech, ash, cedar, oak, sycamore.

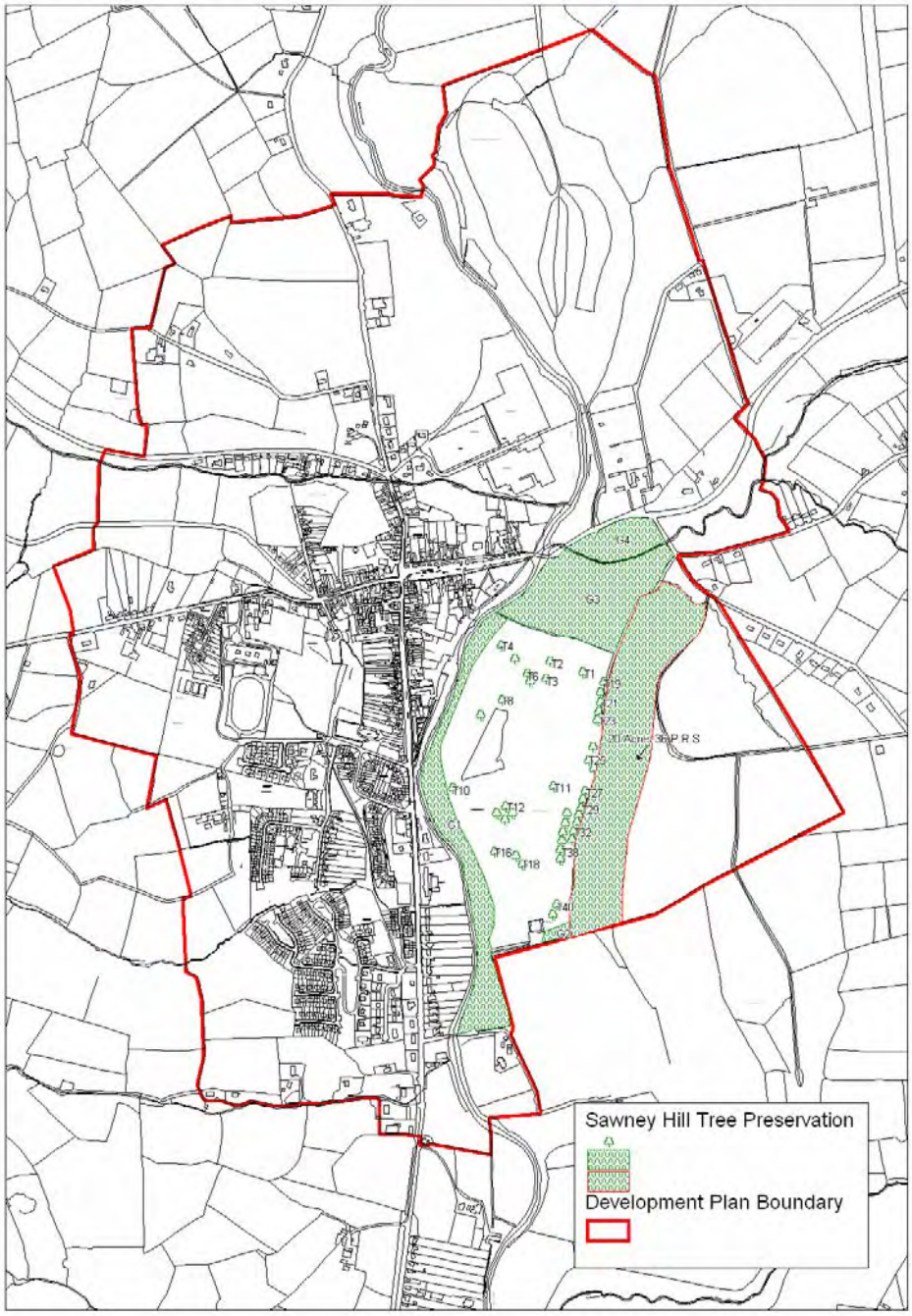

Figure 5.2: Sawney's Wood T.P.O

Aquatic Flora and Fauna

5.2.9 The River Nore, which flows through the centre of the County is one of the principal rivers in the county. The town is located within its river catchment on the banks of the River Dinin, one of the Nore's main tributaries. The Dinin River flows from North to South and is adjoined by three smaller tributaries within the town boundary.

5.2.10 The River Nore forms an important part of the County's Ecological network and

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

5.2.11 The freshwater stretches of the River Nore main channel is a designated salmonid river, however it is possible that there are other salmonid waters throughout the County supporting varying amounts of these species.

5.2.12 The Nore river corridor include the Dinin tributary form part of the River Barrow and River Nore SAC and comprise a large part of Kilkenny's designated ecological areas.

Ecological Networks

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

5.2.14 In Castlecomer these networks include the River Dinin, parts of the old disused railway line and hedgerows in some part of the town provide a continuous linkages of this kind.

5.2.15 In terms of land cover, Castlecomer comprises of mineral extraction sites and transitional woodland on the outskirts of the town, pastures, agricultural land with natural vegetation on unbuilt areas within the town boundary and mixed forest stretching from the Demesne lands through to the golf club.

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

Hedgerows

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

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

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

5.2.20 The aerial photograph of the town illustrates these landscape features including field boundaries, hedgerows, rivers and mature trees.

Figure 5.3: Aerial view of Castlecomer showing key landscape features

Existing Environmental Problems

5.2.21 New development in the town, in particular greenfield development is likely to impact on flora and fauna and overall biodiversity due to the replacement of natural and semi natural habitats with artificial surfaces. The significance of these impacts is currently unknown, however it is likely to be greater where development is located on or nearby ecological networks such as hedgerows or inland surface waters. The loss of natural and semi natural habitats in close

proximity can impact cumulatively on the overall coherence of these networks.

5.2.22 The Screening assessment undertaken in accordance with article 6(3) of the Habitats Directive will assess whether development in the town is likely to have a significant impact upon the designated ecological sites. Specifically, this will investigate in more detail the vulnerability and potential impacts such as soil erosion, industrial and municipal effluents and water quality which is integral to supporting the sites conservation objectives.

Information Gaps

5.2.23 There is no survey information available that provides a faunal list for the area in its current state and determines whether any of the fauna on site are dependent on the continued availability of some aspect of the existing environment. A floral list for the town in its current state is also unavailable.

5.3 Population and Human Health

Demographics

5.3.2 The 2006 Census records Castlecomer's population as 1,531, which represents a 3% increase in the town's population since 2002 (See **Table 5.1**). The level of growth experienced in Castlecomer between 2002 – 2006 is lower than other towns within the county and national trends.

Table 5.1: Castlecomer Census data 1996 - 2006

Town	Population		
	1996	**2002**	**2006**
Castlecomer	1,380	1,482	1,531

5.3.3 Since completion of the most recent census (April, 2006) 29 housing units have been completed. Using the average household size this suggests an additional 83 persons should be added to the recorded population of 1,531. This calculation estimates that there is an existing population of 1,614 residing in Castlecomer.

Socio-Economic Profile

5.3.4 The original development of the Castlecomer estate and town was based on the wealth generated by the extensive mining in the locality. This industry provided significant employment opportunities for the town until their closure in the late 1960s. The subsequent lack of economic activity has since impacted on employment levels in the town and surrounding area.

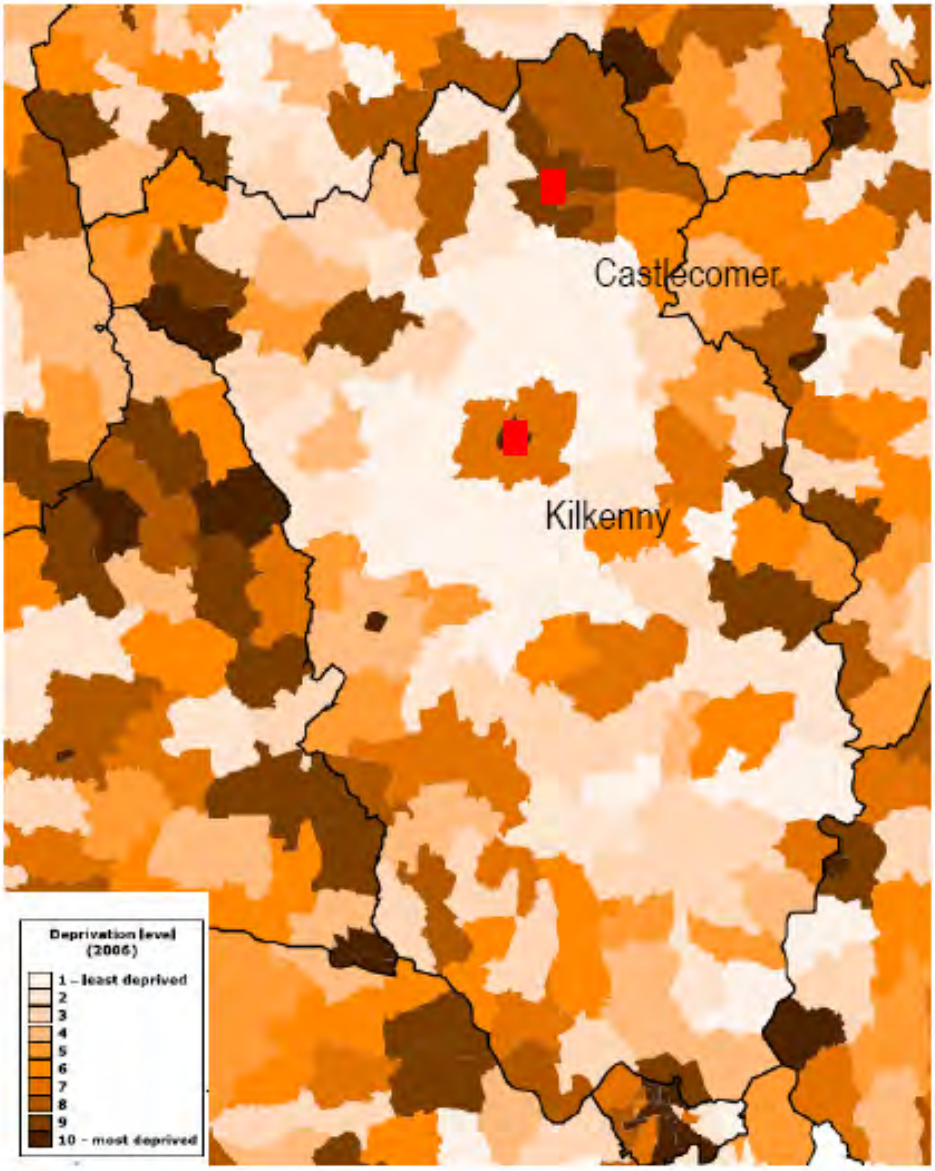

Figure 5.4: Deprivation Index 2006 (Source: SAHRU Technical Report December 2007)

5.3.5 The Deprivation Index (SAHRU Technical Report, 2007 – See **Figure 5.4**) shows relatively high levels of deprivation in Castlecomer when compared to other areas in the Country. The index, a measure of relative material deprivation rather than poverty, which can be defined as a state of *"observable and demonstrable disadvantage relative to the local community to which an individual belongs"*. The index is compiled from five census based indicators which represent or determinants of material disadvantage:

- Unemployment
- Low social class
- No car
- Rented accommodation
- Overcrowding

5.3.6 It is generally acknowledged that less well off groups of the population are more likely to suffer poorer health[3]. A population's socio economic profile, described here in terms of the Deprivation Index is a key determinant of health and wellbeing. Those suffering from high levels of deprivation are also likely to live in a poor quality built environmental which exacerbates health inequalities. The links between planning and public health is well documented and elements of the built environment such as buildings, places, streets and routes play important roles in determining health and wellbeing and reducing health inequalities.

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

Public Spaces

5.3.8 Public spaces are elements of the environment that influence physical, mental and social health. Access to good quality, well maintained public spaces can encourage physical activity reducing the risk of obesity, cardiovascular disease, diabetes and stress and can help to improve overall wellbeing.

5.3.9 At present, Castlecomer has approximately 128 hectares of land zoned as open space which represents over 53.4% of land uses in the town. However, factors such as availability, accessibility, attractiveness and safety, rather than quantity influence the use of public space. As such, use of a large proportion of 128 hectares is constrained by its location on the eastern side of the town and as the Golf Club is privately owned and only opens to private members.

5.3.10 The remaining open space illustrated at **Figure 5.5** includes outdoor sports facilities (GAA and Soccer pitches) to the North of the town, and two areas of amenity greenspace, one to the north west of the town and one opposite the boys' school in the southwest of the town. To the south west of the town and linked to an amenity areas is a green corridor on the path of the disused Castlecomer Railway. This is a linkage through the area and provides an opportunity to provide for a continuous linkage through the area that would enhance permeability and connectivity in the town. These open spaces vary in quality and their attributes are assessed within **Tables 6.2 – 6.4**.

[3] For more information on the links between Planning and Public Health please refer to 'Health Impacts of the built environment, a review' (The Institute of Public Health in Ireland, 2006)

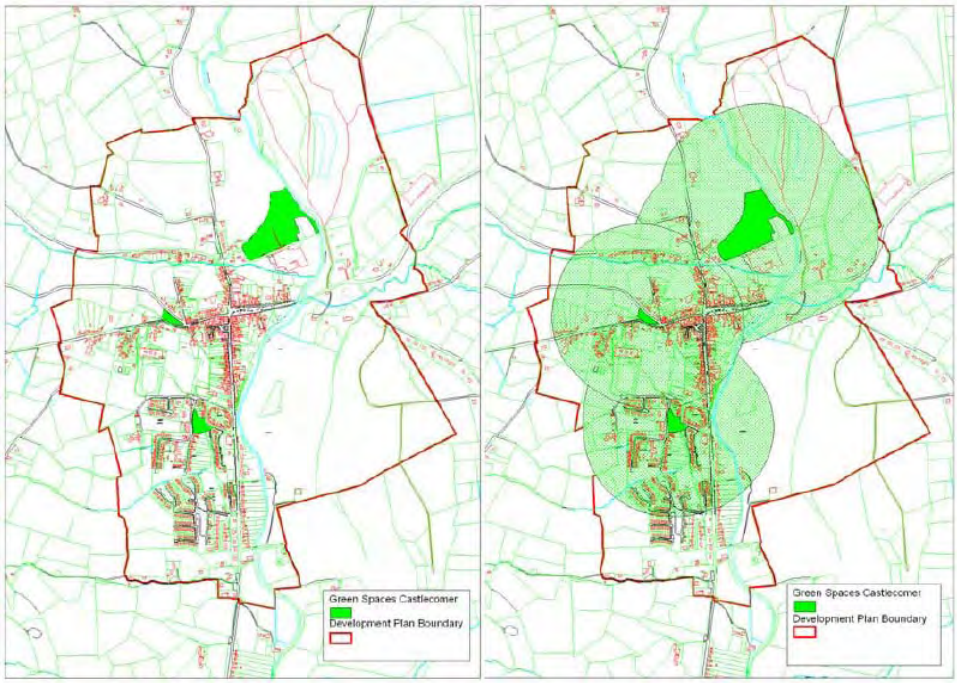

Figure 5.5: Existing Provision of Open Space

Table 5.2: Open Space 1

Open Space 1 **Location: Corner of Barrack St** **Size: 0.31 Ha** **Type: Amenity**	 

Accessibility	This site is an informal open space accessible to the public. Physical accessibility is limited due to the steep slopes surrounding it.
Quality	It is a visually attractive site which is visible from the surrounding area. It is situated on the edge of the built up area at a junction of four roads and the visual prominence of the site is reinforced by a religious statue, located at the corner of the site. There is no formal recreational value to the space, however it is well maintained and benefits from public seating and litter bin. The central area comprises informal grassland with a group of trees towards the back of the site. An informal pathway begins towards the south west edge of the site leading to adjacent agricultural lands.
Primary purpose	Amenity
Management and Maintenance	The site is well maintained.
Value[4]	This site is valuable in terms of its informal recreation, amenity, social role.

[4] Recreational, structural Role, amenity, education cultural heritage, social and cultural, ecological role nature conservation designations

Table 5.3: Open Space 2

Open Space 2 **Location: Open Space Opposite Boys National School** **Size: 0.58 Ha** **Type: Amenity / Linear**	 
Accessibility	This site is an informal open space accessible to the public.
Quality	It is a visually attractive site and benefits from good viewing points to the upland landscape that surrounds the town. The path of the disused railway traverses the site from its northern extent. There no formal recreational value to the space, however it is well maintained and benefits from public seating at the centre of the viewing area.
Primary purpose	Amenity and green corridor.
Management and Maintenance	The site is well maintained.
Value	This site is valuable in terms of its informal recreation, amenity and structural role.

Table 5.4: Open Space 3

Open Space 3 **Location:** **Size: 5.13 Ha** **Type: Amenity**	   
Accessibility	This site comprise of two areas for outdoor formal recreation including a soccer and GAA pitch. It is voluntary sectors owned and managed although use for GAA purpose is in decline due to new facilities located on the Kilkenny road outside the town boundary. This site is in good proximity to the town and reasonably accessible from surrounding residential and commercial area.
Quality	The site is poorly overlooked as it is located adjacent to industrial buildings and the backlands of the commercial zone of the town centre. There is currently limited opportunity for amenity use but the quality of the of the space could be improved by providing for additional functions and increasing activity on the space.
Primary purpose	Formal outdoor recreational
Management and Maintenance	The sites are is well maintained.
Value	This site is valuable in terms of its informal recreation, amenity, social role.

Children's Play Facilities

5.3.11 Children's play is important and provides key benefits to health such as:

- Promoting children's development, learning, creativity and independence;
- Keeping children healthy and active;
- Allowing children to find out about themselves,
- their abilities and their interests;
- Giving children the chance to let off steam and have fun;
- Having a therapeutic effect by helping children to deal with difficult or painful circumstances, such as emotional stress or medical treatment.

5.3.12 There are currently two play facilities in Castlecomer which provide facilities for the Community. **Figure 5.6** illustrates the location of these facilities and shows

that some areas, particularly in the Northwest of the town, could be described as deficient. Whilst quality of existing facilities is good, accessibility, particularly for pedestrians, to the facility in the Castlecomer Demesne could be improved.

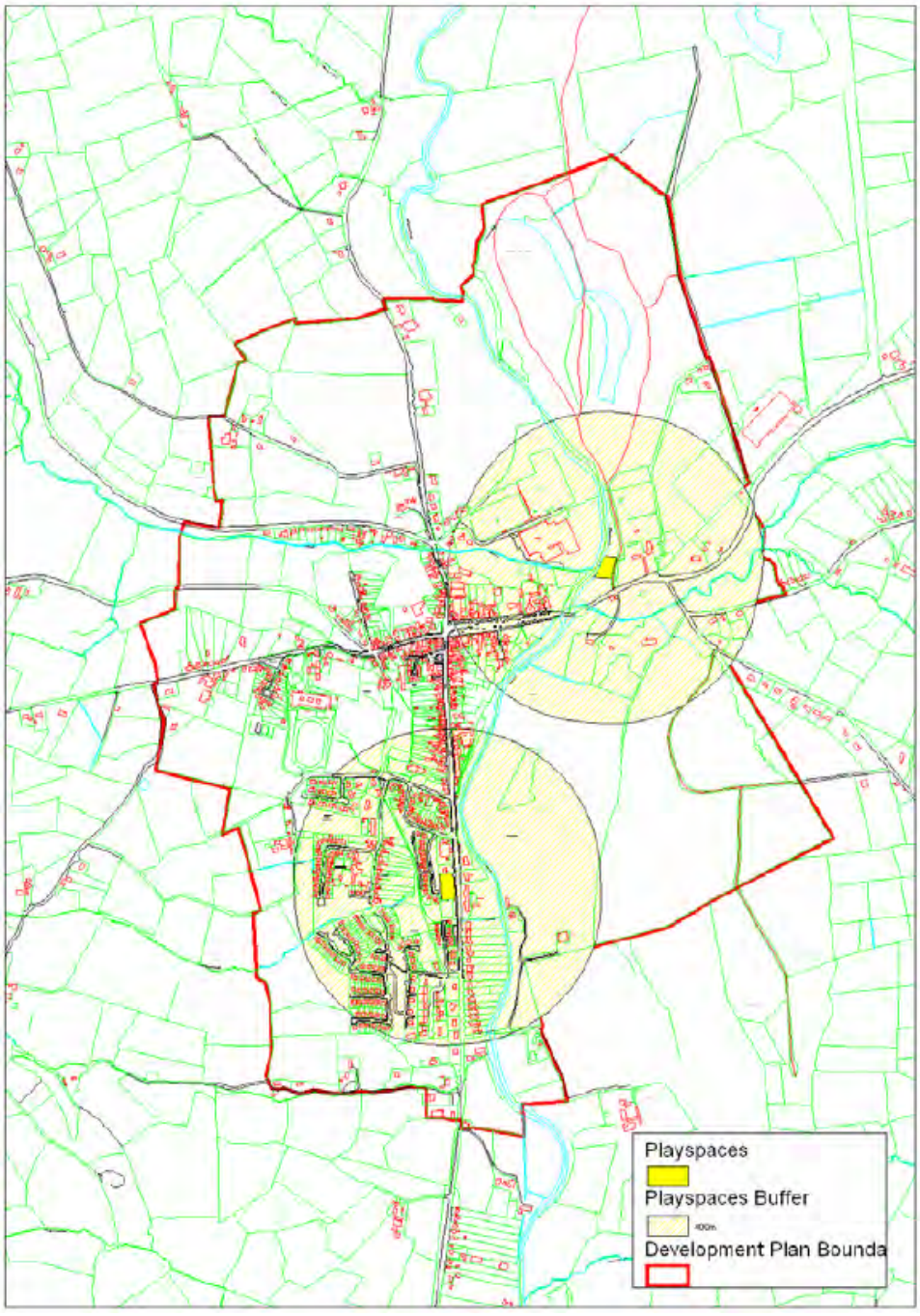

Figure 5.6: Existing provision of Children's Playspace

Information Gaps

5.3.13 Information on health inequalities in the town in additional, to information on

noise levels, air quality and usage of open space is currently unavailable.

5.4 Geomorphology

5.4.1 The basic rock formation of County Kilkenny consists almost completely of limestone with sedimentary rocks of various types and ages commonly found mantling the limestone. Sandstones and shales provide the higher topographical features, such as the Castlecomer Plateau. Castlecomer is located at the heart of this plateau which has been subject to lengthy erosion particularly water erosion by the rivers flowing through it with the areas that have resisted erosion standing out as hills and ridges.

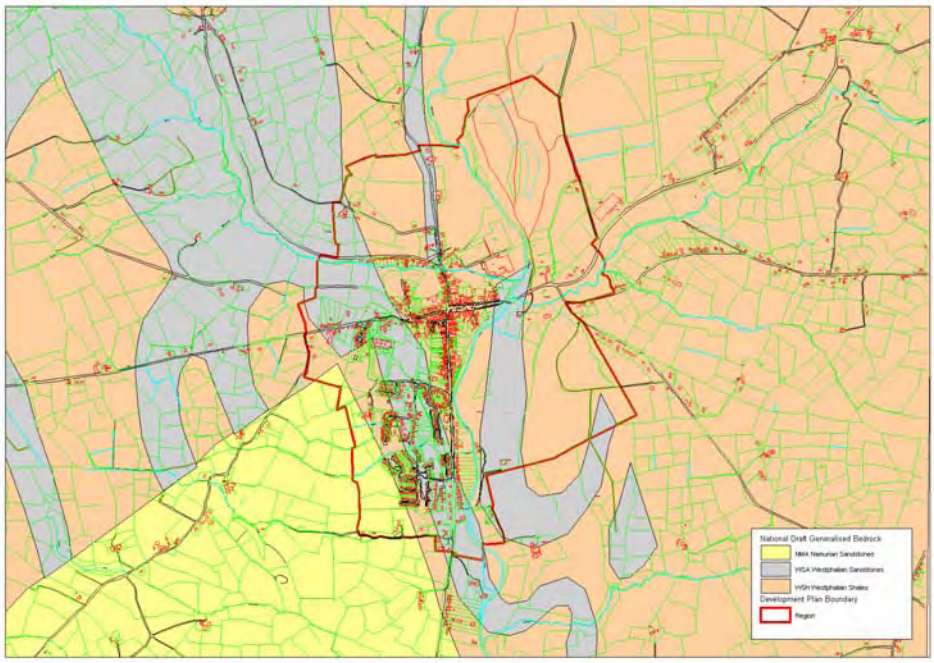

Figure 5.7: Castlecomer National Draft Generalised Bedrock (Source GSI)

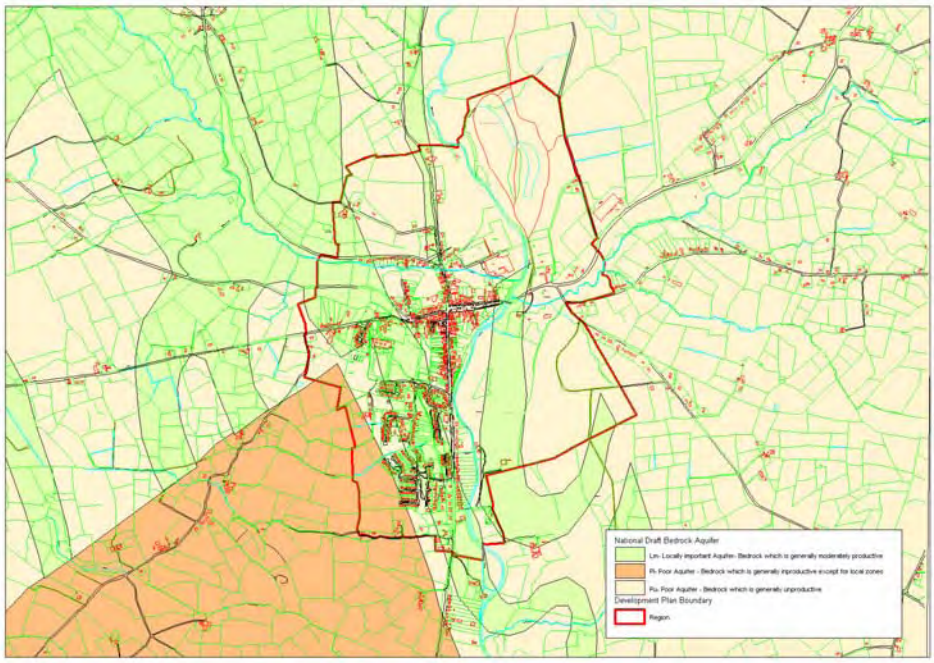

Figure 5.8: Castlecomer National Draft Bedrock Aquifer map (Source GSI)

Soil

5.4.2 Castlecomer is situated in an area of gley soils. Generally, the area is poorly drained due to a combination of the soil type, undulating topography and high groundwater level. As a result it has a heavy consistency, is hard to work and land use range is limited and best suited for grassland production. Development

and provision of services must account for this in addition to the rather mild and moist climate that delivers an average annual rainfall of 800-1000mm.

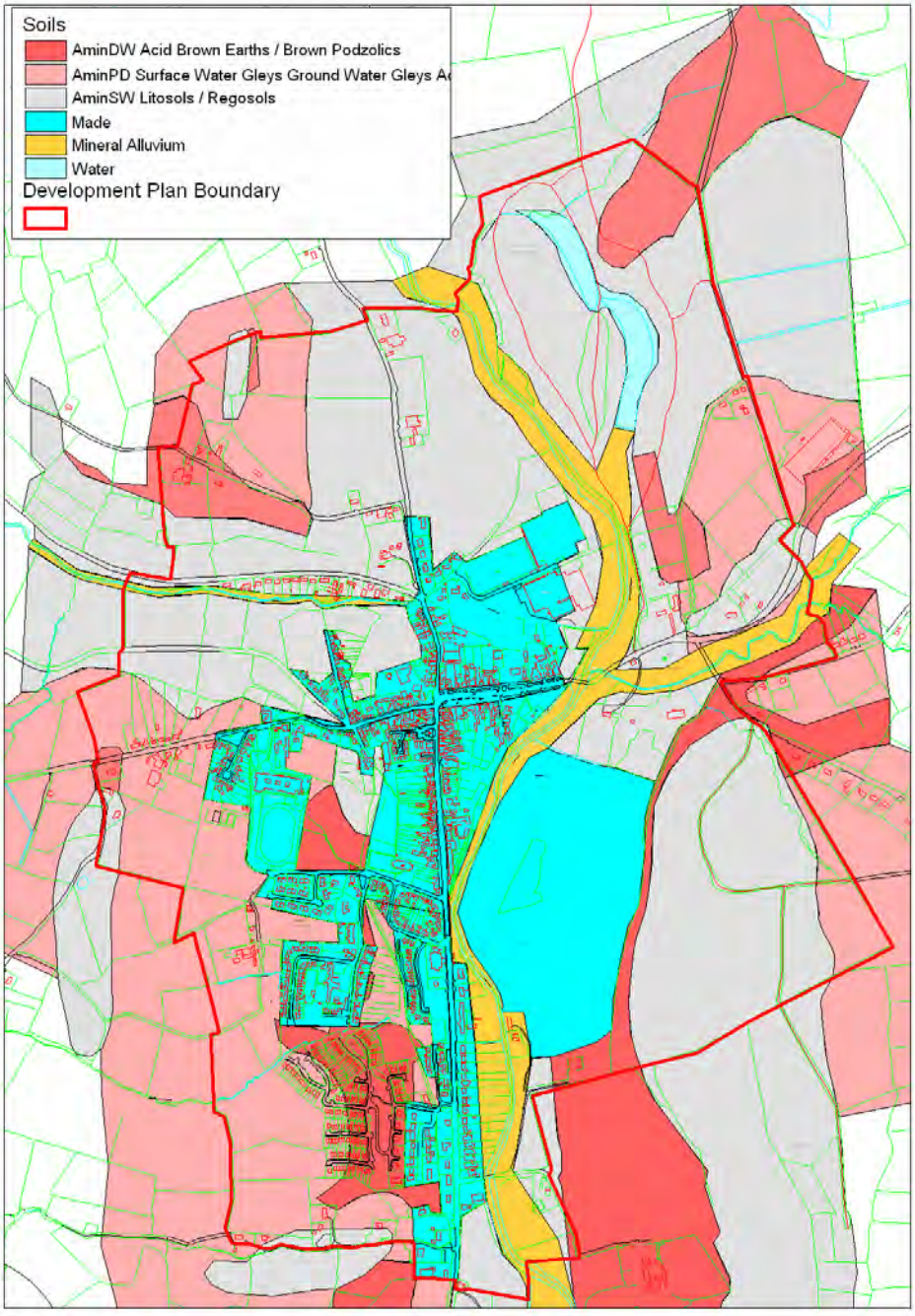

Figure 5.9: Castlecomer Soils map (Source EPA)

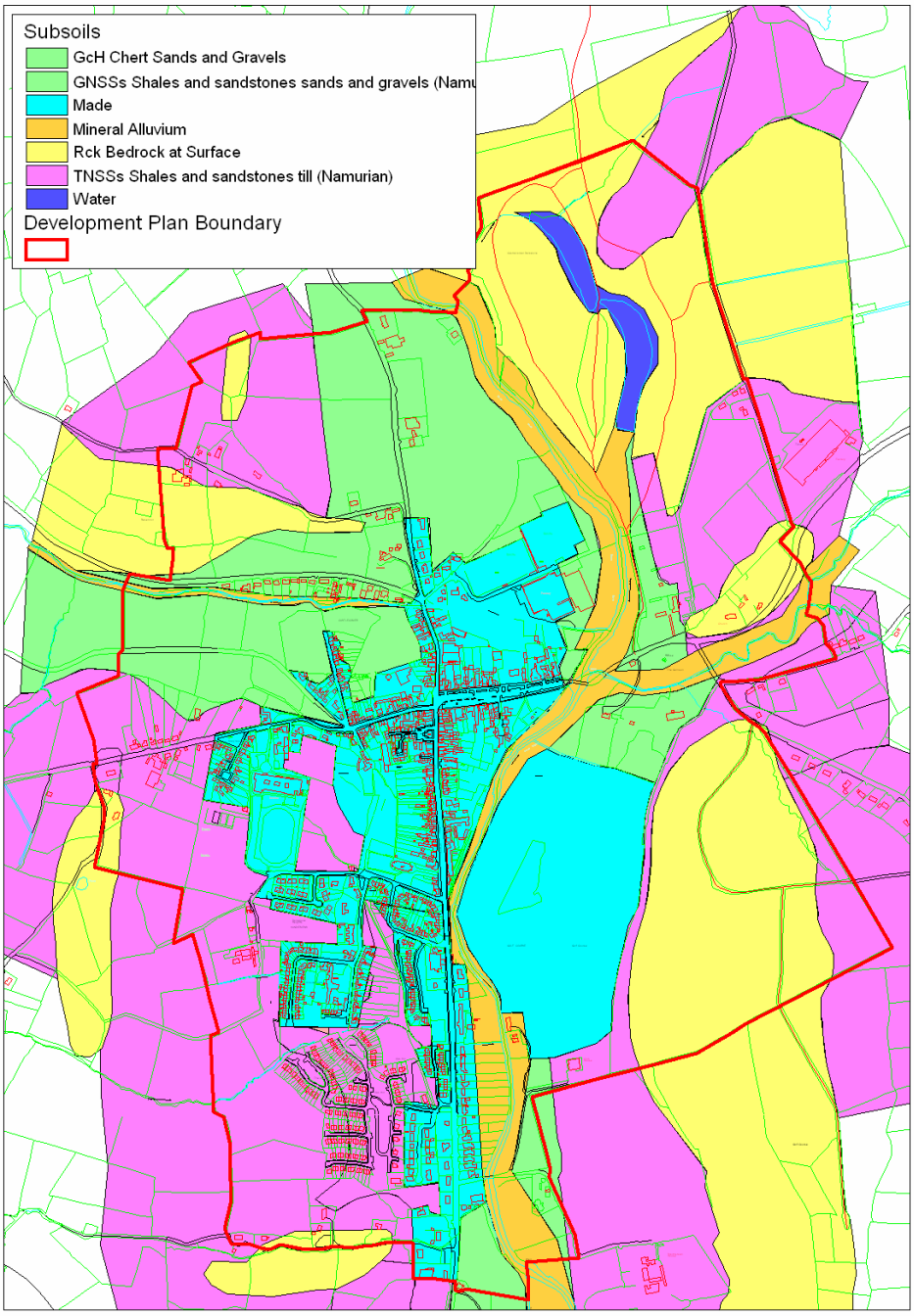

Figure 5.10: Castlecomer Subsoils map (Source EPA)

5.5 Water Infrastructure and Quality

5.5.1 Waste water treatment in Castlecomer is presently provided for by secondary treatment which is a combined system that deals with both sewage and overflow resulting from periods of heavy rain. There are significant constraints present for dealing with waste water in the area to the east of the Castlecomer Demesne as there is no existing linkage with the town waste water treatment infrastructure.

5.5.2 Current waste water treatment capacity stands at 2,500 population equivalent

(PE), with present loading of 4,000 PE and discharge is made to a freshwater (river) which is defined as a sensitive area[5]. The Waste Water Treatment Works are located towards the Southeast of the town and capacity is set to increase to 6,000 population equivalent by mid August 2009 which will provide the town with a tertiary treatment system to the standard required by the Urban Wastewater Treatment regulations. These standards require the assimilative capacity of the receiving water for nutrients (Nitrogen & Phosphorus) to be assessed (in accordance with the regulations) and the calculation of the permitted nutrient loadings in the treated effluent discharged.

5.5.3 Prior to the provision of this infrastructure, recurring issues in terms of the quality of urban waste water discharges had been highlighted by the 'Urban Waste Water Discharges in Ireland 2004 to 2005' report, which analysed the quality of treatment of waste water for all agglomerations with a population equivalent over 500. General problems identified at waste water treatment plants visited during these audits, which are in need of corrective action, include:

- Inadequate collection systems for waste water (e.g. combined sewer
- overflows);
- Inadequate screening of effluent waste water and storm water overflows;
- Insufficient treatment capacity;
- Poor assimilative capacity for discharged effluent in some receiving waters; and,
- Poor sludge management on site and incomplete sludge records.

5.5.4 In evaluating the causes of the non-compliance with the Regulations the EPA has concluded that many waste water treatment plants are under increasing pressure from development that has taken place throughout the country over the last number of years.

5.5.5 The requirements of the Regulations in respect of the provision of treatment plants with capacity of less than 2,000 population equivalent is for appropriate treatment to be provided whereby *"treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and of other Community Directives"*. The level of treatment will depend on local circumstances, for example, more stringent treatment is required for agglomerations discharging to sensitive waters, and will vary in terms of process depending on the quality objectives of the receiving waters.

5.5.6 Where discharges to sensitive water bodies occur, the Regulations specify emission limit values for total phosphorus and/or total nitrogen in addition to values for BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand) and TSS (Total Suspended Solids), which apply to discharges generally. The report assesses the performance of secondary waste water treatment plants with respect to Biochemical oxygen demand (BOD), Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD).

5.5.7 In terms of effluent quality from the Secondary Waste water treatment plant in Castlecomer results for 2004 and 2005 show that the plant was not complying with the regulations (See **Appendix 2**). The forthcoming improvement will however address these qualitative issues and provide addition capacity of 2,000 population equivalent to facilitate further development in the town. Beyond this,

[5] "sensitive areas" are those areas specified in the third schedule of the Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001), Urban Waste Water Treatment (Amendment) Regulations, 2004 (S.I. 440 of 2004) and such other areas as may be identified pursuant to article 5 of the Urban Waste Water Treatment Directive.

there is a further opportunity to increase capacity to 9,000 p.e. through modular additions, however this may require additional lands.

5.5.8 Prior to the upgrade to 6,000 in mid August 2009, it is likely that the lack of capacity in the existing waste water treatment infrastructure will constrain development in the town and contribute to the deterioration of water quality.

5.5.9 Fresh water supplies are provided mainly from the freshwater lakes located in the Castlecomer Demesne. These supplies are limited with no additional capacity available. Accessing additional water supplies is proving problematic as there are particular issues with regard to accessing ground water due to the nature of the soil and the presence of manganese, a chemical which presents significant difficulties during the treatment process. New sources of fresh water are currently being investigated and will take progressed through the main services development capital programme.

Drinking Water Quality

5.5.10 In January 2008 the EPA reported on the **'***Provision and Quality of Drinking Water in Ireland: A Report for the Years 2006 – 2007*'. This was the first report in response to the EC Drinking Water Regulations, which provides for a greater level of consumer protection by requiring public water suppliers to notify the EPA and the Health Service Executive where drinking water fails to meet the standards.

5.5.11 The report concluded that a number of public water supplies required examination from source to consumer in order to determine whether replacements or upgrades were needed, or whether operational practices should be improved. These water supplies were placed on a Remedial Action List for one or more of the following reasons:

- Failure to meet the E. coli standard at some point in the last two years;
- Inadequate treatment (e.g. no treatment other than chlorination or poor turbidity removal or excessive levels of aluminium in the treated water);
- Showing elevated levels of nitrate or being unable to meet the new bromate or Trihalomethanes (THM) standards coming into force at the end of 2008;
- Monitoring results or compliance checks by the EPA that indicate a lack of operational control at the treatment plant and
- Supplies were identified by the Health Service Executive (HSE) where improvements are required.

5.5.12 The Clogh-Castlecomer WS has been placed on the Remedial Action List due to elevated levels of THM's above the current standard in the Drinking Water Regulations. Trihalomethanes (THM) are formed along with other disinfection by products when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water.

Water Framework Directive

5.5.13 The Water Framework Directive (WFD) 2000/60/EC is a significant piece of water-related legislation and applies to all water including:

- Rivers
- Lakes
- Transitional Waters (Estuaries)
- Coastal Waters

- Groundwaters
- Dependant Wetlands

5.5.14 The WFD manages these waters in natural, geographical units called River Basins. To make management practical, neighbouring river basins have been grouped into River Basin Districts (RBDs). Ireland has about 400 river basins which have been grouped into 8 RBDs. The WFD target is that waters should have achieved at least 'good status' by 2015 with no deterioration in existing water quality status. The main aims of the WFD are to:

- Protect/enhance all surface and ground waters
- Achieve "good status" for all water by December 2015
- Manage water bodies based on river basins (catchments)
- Use a "combined approach" of emission limit values and quality standards
- Involve the public
- Streamline legislation

SERBD Characterisation (Nov 2005)

5.5.15 Castlecomer is located in the South Eastern River Basin District (SERBD) Project facilitates implementation of the Water Framework Directive (WFD). The SERBD is one of the largest River Basin Districts in Ireland, covering approximately one fifth of the country and includes the Barrow, Nore, Suir and Slaney River Basins along with smaller basins in the coastal areas of Wexford and Waterford.

5.5.16 For the purposes of assessment, reporting and management, water in the SERBD has been divided into groundwater, rivers, lakes, estuarine waters and coastal waters which are in turn divided into specific, clearly defined water bodies. Water bodies have been assessed and given a score based on the likelihood of them achieving the objectives of the WFD.

- 1a - water body is at risk of failing to meet good status in 2015;
- 1b - water body is thought to be at risk of failing to meet the objective pending further investigation;
- 2a - water body is expected to meet good status in 2015, pending further investigation; and
- 2b - the water body is expected to meet good status in 2015.

5.5.17 This report presents an analysis, required by the WFD, of the characteristics of the SERBD and reviews the impact of human activity on waters and provides an economic baseline of water use in accordance with the requirements of Article 5 of the Directive. The report is supplementary to a national characterisation summary report submitted to the European Commission in March 2005.

5.5.18 The study area includes a number of rivers and streams that help to drain the Nore catchment. The town is principally located on the River Dinin and **Figure 5.11** shows the location of the principal rivers and streams in the town. Overall risk result for the tributary of the Dinin River joining from the west is 1a; that is at significant risk of failing to meet good status by 2015. The central water body in the town, the Mid Dinin River is also described as being at significant risk. Water bodies placed in this 'At Significant Risk' category will need improvement to achieve the required status.

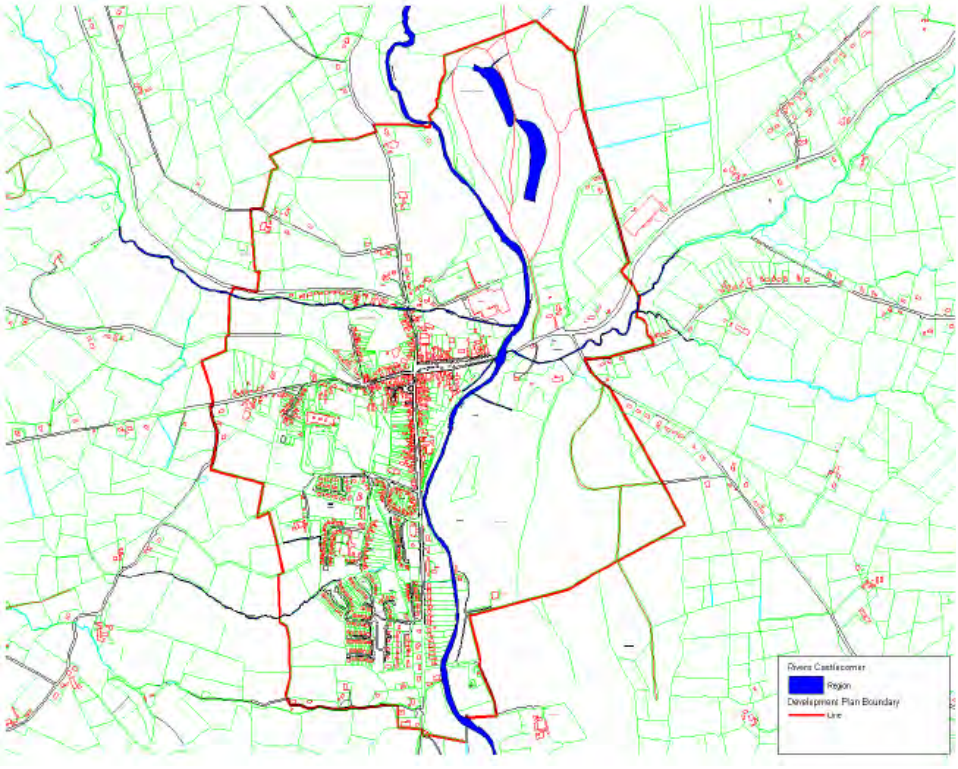

Figure 5.11: Surface Water Bodies in Castlecomer

EPA Monitoring

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

5.5.20 There are a number of environmental problems in the town in relation to water quality which has the potential for adverse impacts on biodiversity and flora and fauna, drinking water supplies and human health.

Groundwater

5.5.21 Groundwater is an important resource and used for drinking water, industry and agricultural, makes an important contribution to river flows and surface water systems many of which are used for water supply and recreational purposes.

5.5.22 In many rivers, more than 50% of the annual flow is derived from groundwater and more significantly, in low flow periods in summer, more than 90% is groundwater. If groundwater becomes contaminated surface water quality can also be affected and so the protection of groundwater resources is an important aspect of sustaining surface water quality.

5.5.23 It is estimated that groundwater contributes about 40% of all the water flowing in the River Nore. It is water located beneath the ground surface in pore spaces and fractures of geologic formations. If the geologic formation can yield enough water for a significant water supply then the term aquifer is often used.

5.5.24 The Water Framework Directive and the forthcoming EU Directive on "the Protection of Groundwater Against Pollution and Deterioration" adopt a holistic view of water resources, establishing links between groundwater and associated surface water and ecological receptors. A characterisation and risk assessment report was prepared for the purposes of the Directive and identified groundwater bodies that potentially have groundwater quality or over-abstraction problems. The SERBD Groundwater risk assessment highlights that the majority of the area around Castlecomer is expected to achieve good status with the exception of an area to the North East which is possibly at risk of not achieving good status.

5.5.25 The Geological Survey of Ireland rates aquifers according to their vulnerability to pollution (See **Figure 5.12**). Vulnerability maps are an important part of groundwater protection schemes and are an essential element in the decision-making on the location of potentially polluting activities. Prevention of groundwater contamination is of critical because of the importance of groundwater to a number of environmental receptors and in the fact that the consequences of pollution, last far longer than surface water contamination.

5.5.26 In Castlecomer, development areas largely correspond to areas of high vulnerability with smaller pockets of extreme vulnerability to the northwest of the town. Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Aquifers of extreme vulnerability and high vulnerability are the two classifications of aquifers which are most sensitive to an imposed contaminant load.

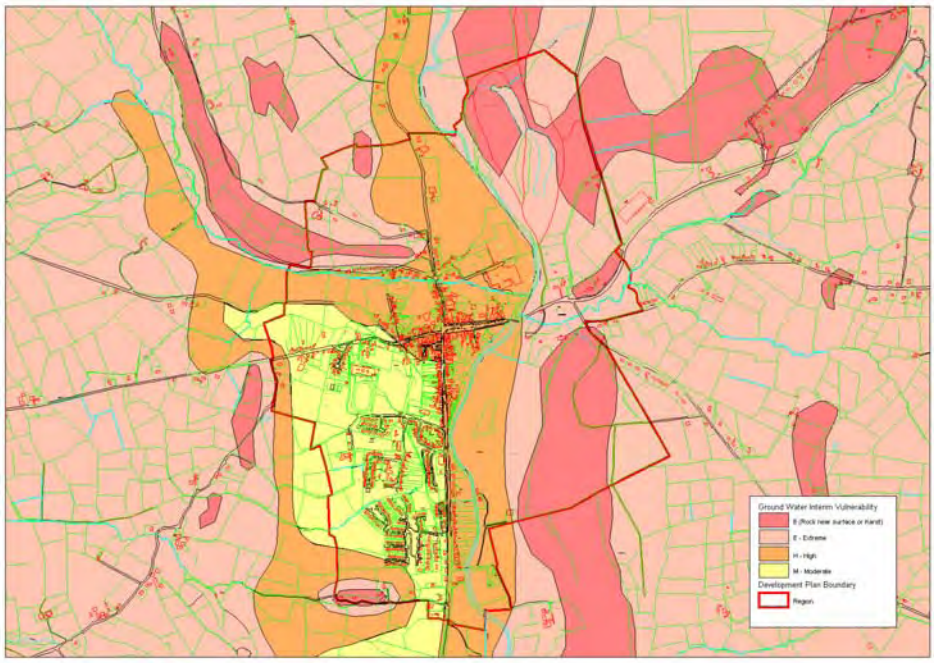

Figure 5.12: Castlecomer Groundwater Interim Vulnerability (Source GSI)

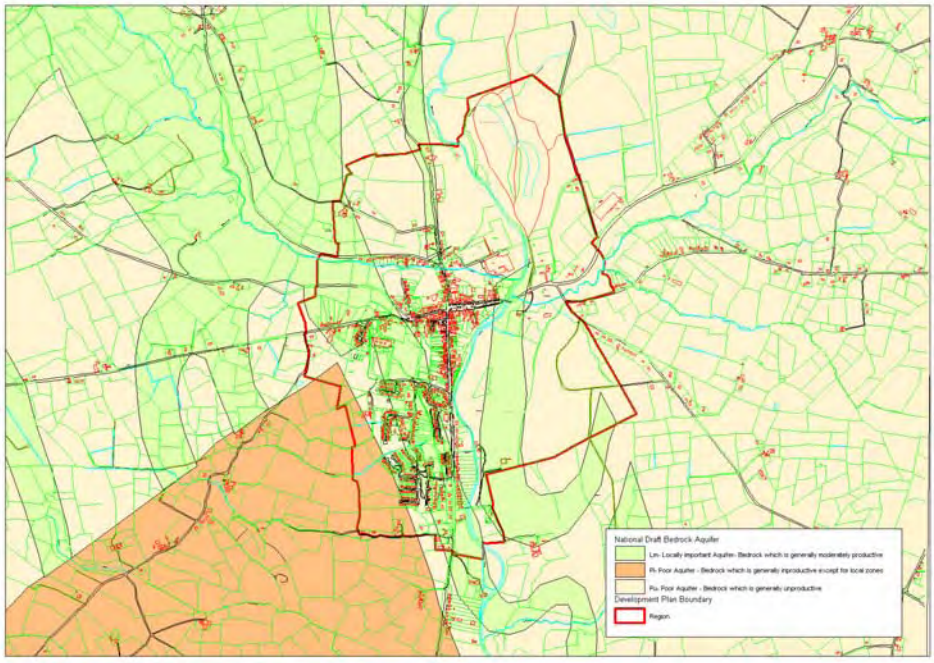

Figure 5.13: Castlecomer National Draft Bedrock Aquifer map (Source GSI)

5.6 Flood Protection

Background

5.6.2 Flooding is a natural phenomenon and where there is no risk to human life and property, it is beneficial as it provides fertile sediments for farmland, maintains valuable wildlife habitats and reduces flood risk elsewhere in the catchment.

The floodplain plays a key role in this process and can be described as the flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding and acts as a temporary store of for flood waters and facilitates their conveyance and flood levels downstream. A number of human activities tend to restrict the capacity of rivers to accommodate large storm flows. These include:

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

5.6.3 The type of damage that may occurs for a given flood level include the following:

- Flooding of development such as property or infrastructure generally results in some damage. Development within a flood risk area therefore increases the potential damage when the flooding occurs. Such development can occur inadvertently due to lack of awareness of flood risk which can be a result of long intervals between flood events.
- It is recognised that development in a flood risk area is sometimes necessary for economic reasons, but the type of development permitted should be compatible with the existence of the risk. Inappropriate development involves property or contents that have a high potential for flood damage being located in a flood risk area. Inappropriate development might include:
  - high-density residential property (economic, social and personal welfare risk), or any residential property in areas subject to flash or deep flooding (risk to life)
  - manufacturing or storage property where the cost of flood damage to contents (machinery/products) would be high (economic risk)
  - industry or services where flooding could cause leakage of pollutants, such as chemical or sewage plants (risk to personal health and environment)
  - property or infrastructure with particular structural vulnerability to flooding (economic risk and risk to life)

5.6.4 **Figure 5.11** illustrate the surface water bodies in Castlecomer, including the main river traversing the town is the Dinin which is joined at various stages by a number of tributaries. Information from the OPW records a Flood Event at Ballyhemmin on the N78. **Figure 5.14** illustrates the location of these events and **Figure 5.15** the extent of benefitting lands. Benefitting land maps were prepared as part of the design of the OPW Arterial Drainage Schemes and indicate lands that were poorly drained and would benefit from drainage. While not developed as floodplain or flood extent maps, a good correlation has been observed between the 'Benefitting Lands' and those areas that may be prone to flooding. Within the town boundary, existing topographical features mean that these lands are primarily located towards the South of the town and coincide with areas of low lying land.

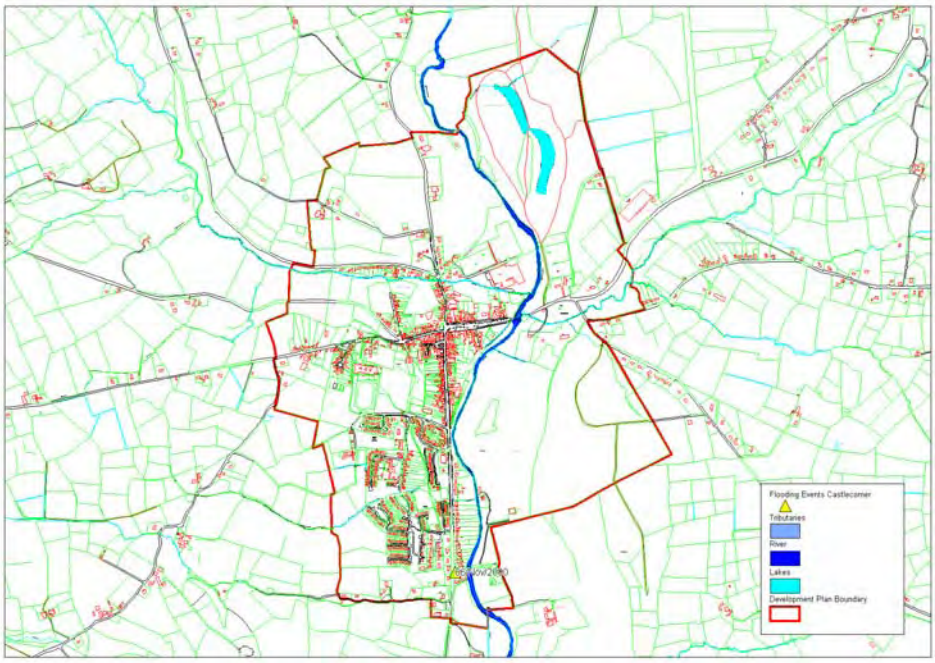

Figure 5.14: Castlecomer Flooding Events (Source O.P.W.)

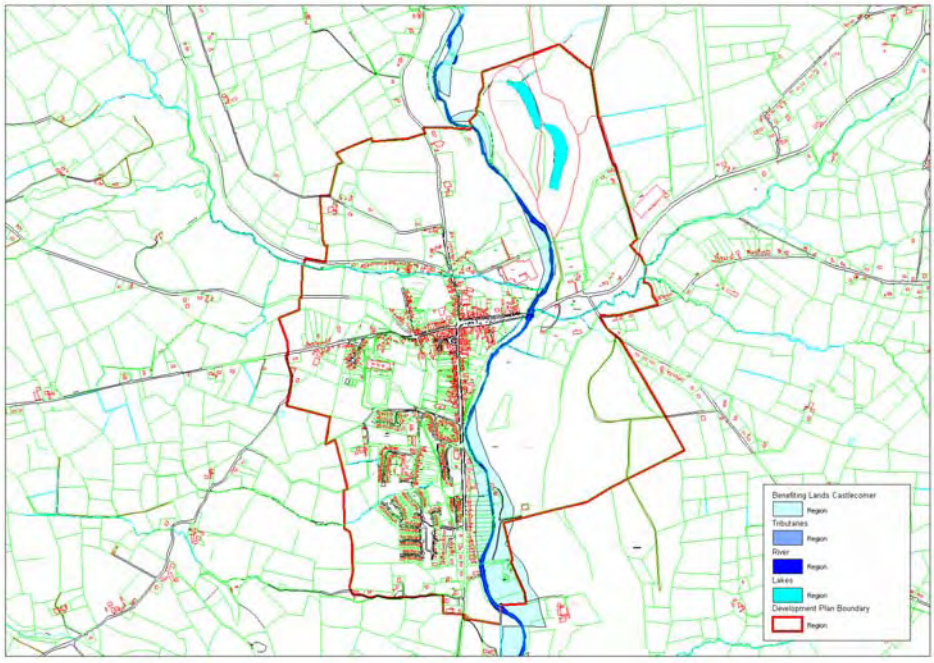

Figure 5.15: Castlecomer Benefitting Lands (Source O.P.W.)

Information Gaps

5.6.5 A review of national flood policy establishes the need for an effective policy for the future management of flood risk in Ireland. A key recommendation outlined in the Final report of the Flood Policy Review Group (Sept, 2004) was the completion of a National Flood Hazard Mapping Programme with the results to be published on the Flood Hazard Mapping website.

5.6.6 Flood hazard maps can indicate the areas of land or property that have

historically been flooded or that are considered to be at risk from flooding and can be described as Historic or Predictive accordingly. Historic flood mapping is currently available through information provided by the Office of Public Works. This provides information on areas of existing flood risk and highlights the need to avoid creating additional risk that could arise through inappropriate building in floodplains. However, as the extent of flooding is not mapped in every case, most historical flooding incidents can only be shown using the point symbol as is the case in Castlecomer. As a result, although this information allows some consideration of flood risk issues when preparing spatial plans, the database is not a comprehensive catalogue of all past flood events. In addition, the absence of a flood indicator (point or area symbol) for a past flood event in any particular location does not mean that flooding has never occurred in that area nor does it mean that that area may not be liable to flooding in the future.

5.6.7 Predictive flood mapping is the mapping of flood levels and extents that are predicted to occur for a given single or range of selected frequencies (such as, a 1% or 1-in-100 year return period). Predictive flood maps are more complex to produce and completed using techniques, such as hydraulic and hydrological modelling, detailed channel and floodplain surveying. The OPW are in the process of producing predictive flood maps for the country on a catchment-by-catchment basis however this information is currently unavailable as the study for the River Nore catchment has yet to commence.

5.6.8 In the absence of predictive flood maps showing the vulnerability of areas to flooding of different intensities, OPW flood event records and bennefitting lands maps, historic OS maps and local knowledge will be used to inform the preparation of the Local Area Plan and provide for a precautionary approach that is advisable particularly in the context of climate change.

5.7 Air and Climatic Factors

Air

5.7.2 Air quality is assessed by monitoring the levels of various pollutants and checks whether air quality meets standards that are considered adequate for the protection of human health and the environment. These pollutants include particulate matter (PM_{10}), sulphur dioxide, nitrogen oxides, ground-level ozone and black smoke.

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

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

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

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

5.7.5 The air quality analysis is based on concentration measurements of the

following pollutants: particulate matter, ozone, NO_x, SO_2, lead, CO and benzene. The pollutants of most concern are fine particulate matter, expressed as PM_{10}, nitrogen dioxide and, to a lesser extent, ozone. Castlecomer is located within Zone D and the annual air quality reports give summary results showing typical concentrations of pollutants in this zone. The 'Air Quality in Ireland 2006 Report concludes that these pollutants are below thresholds in these areas with the exception of PM_{10}.

Climate

5.7.6 Climate is quite uniform throughout the County. The continental climate type of the County is rather mild and moist with an average annual rainfall of 800-1000mm. Mean daily temperatures range from 5.2oC to 13.4oC, however it is known that temperatures vary rather extremely throughout the year (the highest temperature ever recorded in Ireland was in June 1887 at Kilkenny Castle when 33.3oC was recorded) Nevertheless, the climate is generally fairly stable as it is the area of the country least affected by the sea. However, Kilkenny experiences an average of 4 days per year with snow lying, 9 days per year with hail, and 5 days per year with thunderstorms. (CASS, 2003).

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

5.7.8 The 2003 report, *Climate Change: Scenarios and Impacts for Ireland*, is a major assessment of the possible impacts of climate change on Ireland. It examines the possible magnitude and likely impacts over the course of the 21st century by establishing scenarios for the future. The report highlights possible impacts of these scenarios in which may include pressures on the water supply infrastructure, the likelihood of increased frequency of flooding, general effects to the marine environment as a result of higher water temperatures, threats to the coastline due to higher sea levels, and general threats to ecosystems and biodiversity.

5.7.9 For Castlecomer, climate change may exacerbate any existing issues in relation to water supply and flooding.

5.7.10 Greenhouse gases and their associated impact on climate change are recognised as a major environmental threat both globally and nationally. Avoided emissions by minimizing where possible the use of car will help to reduce the effects of climate change and minimize the impact on air quality. Latest estimates of greenhouse gases up to 2006 from the EPA reveals that the overall figure in 2006 were 69.77 million tonnes carbon dioxide equivalent, 0.8 percent lower than the level of emissions in 2005. Transport continues be the dominant growth sector with road transport accounting for 97% of transport sector emissions. Rural areas and towns, such as Castlecomer, that have limited access to public transport are likely to rely heavily on the use of private vehicles with usage rates likely to be consistent with these trends.

5.8 Material Assets: Transport

5.8.1 The main transport infrastructure is provided by the N78, which is a national road going through the centre of the town. It comes in through Ardra and Donaguile and heads back out through Ballyhimmin. Heading North-East, this road heads through Athy on the way to Dublin. Before Athy there is a

junction with the N80, from which Carlow and Portlaoise are accessible. The road South out of Castlecomer heads to Kilkenny City. The main road North is the Clogh Road that heads toward Moyadd. The road West heads towards Ballyragget where it meets the N78. The road East heads out through Bolton and on towards Knocktopher.

Transport Services

5.8.2 Transport services in the town include a Bus Eireann service from Dublin-Kilkenny-Clonmel-Cork and a JJ Kavanagh service from Dublin to Clonmel. The town is 20 minutes by road to Kilkenny City which is well served by the Dublin train. Castlecomer is among the areas served by the 'Ring a Link' scheme that is funded by the Rural Transport Initiative under Transport 21. The service is available from 8.00 till 19.00 on a Saturday.

5.8.3 With the exception of those services described above, Castlecomer's public transport services is limited particularly with respect to the those living in rural locations within the catchment of the town. This is consistent with trends in the majority of small to medium sized towns and their catchment areas which are largely dependant on road transport and the use of the car.

5.8.4 Recent Census (2006) figures confirm that cars are the dominant means of transport in the town with over 50% using the car to travel to work, school or college. As the predominant mode of transport, car use has resulted in traffic congestion in the town centre and for those who do not benefit from car ownership this can create barriers to the access of services and employment opportunities in the town or elsewhere.

5.8.5 Within the town, the urban structure and topography have contributed to poor connectivity. Improving accessibility to services is important to support the long term vision of Castlecomer as a district town and improve on recent census (2006) figures showing that approximately 30% of people travel by foot and 0.23% by bicycle as a means of travel to work, school or college.

5.8.6 Castlecomer faces particular issues with respect to traffic management and congestion with the main axis of the town is car dominated which detracts from the visual appeal of the street and it must impact on the availability of space for other uses. Part of the issues stems from the fact that parking facilities in the town centre is occupied by long term parking associated with local businesses and is not managed to facilitate short term visits by shoppers and visitors.

5.9 Cultural Heritage

Background

5.9.2 The earliest record of Castlecomer dates from 1200 when a Motte and Norman castle was erected east of the existing bridge. In 1685 Sir Christopher Wandesforde began the construction of the town and demesne near the site of the old Castle. The town was formally planned with the central axis based on a large marketplace, which this corresponds to the present square. The towns principal economic drivers included the wealth generated from the mining resources of the immediate area, estate village for the Castlecomer Demesne of the coal mine owners, the Wandesford family in addition to its role as a principal market town for North Kilkenny. **Figure 5.16** traces the towns historic development from 1842 to 1902.

5.9.3 Since the loss of the mining industry as a major employer, the towns main role

is to act as a service centre for a densely populated rural hinterland. However, due to the poor to average quality of the surrounding agricultural land (stemming from topographical constraints), the strength of the agricultural industry in this area is limited. The lack of economic activity has impacted on employment levels in the town and surrounding area.

5.10 National Monuments and Record of Monuments and Places

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

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

5.10.2 The Archaeological Survey of Ireland holds the inventory of archaeological monuments which contains records of all known or possible monuments pre-dating 1700 AD that have been brought to its attention and also includes a selection of monuments from the post-1700 AD period. These are referred to as Sites and Monuments Records (SMRs) which formed the basis for the establishment of the statutory Record of Monuments and Places pursuant to Section 12 of the National Monuments (Amendment) Act 1994. The Record of Monuments and Places, consisting of lists of monuments and places for each county in the State.

5.10.3 The survey also produced reports on all historic towns dating to before 1700 AD with a view to delineating zones of archaeological potential within which archaeological deposits may exist. Whilst the town does not contain any national monuments, Castlecomer was subject to this survey and is considered a zone of archaeological potential. The extent of the zone of potential in addition to the Nationally Important Monuments and Sites is illustrated in **Figure 8.4.**

Record of Protected Structures

5.10.4 The Existing development plan contains 26 structures Record of Protected Structures. Of these 26, 2 are of national importance, 10 are of regional importance and 14 are of local importance.

National Inventory of Architectural Heritage

5.10.5 The National Inventory of Architectural Heritage has recorded a number of structures within Castlecomer which are mapped in **Figure 5.17**.

Hedgerows

5.10.6 Much of Ireland's hedgerow landscape was established between 1750 and 1850 as landlords enclosed former commonage to form fields. For hedges that are older they were likely be used to delineate townland boundaries which can be seen on the old Ordinance Survey maps as dotted lines (See **Figure 5.16**). They are usually made up of species such as hawthorn and may have trees of

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

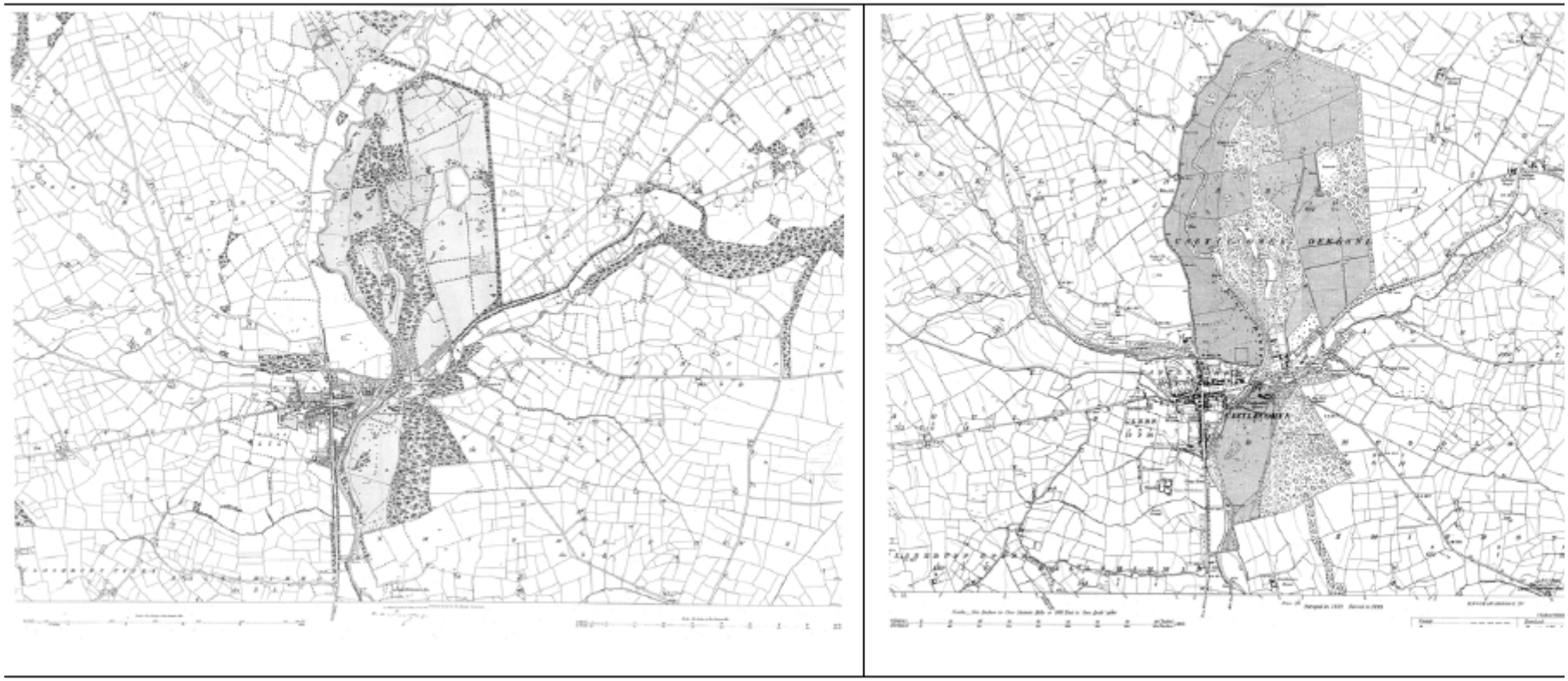

Figure 5.16: Castlecomer 1842 and 1902 OSI Maps (Source: Trinity Historic Maps Archive)

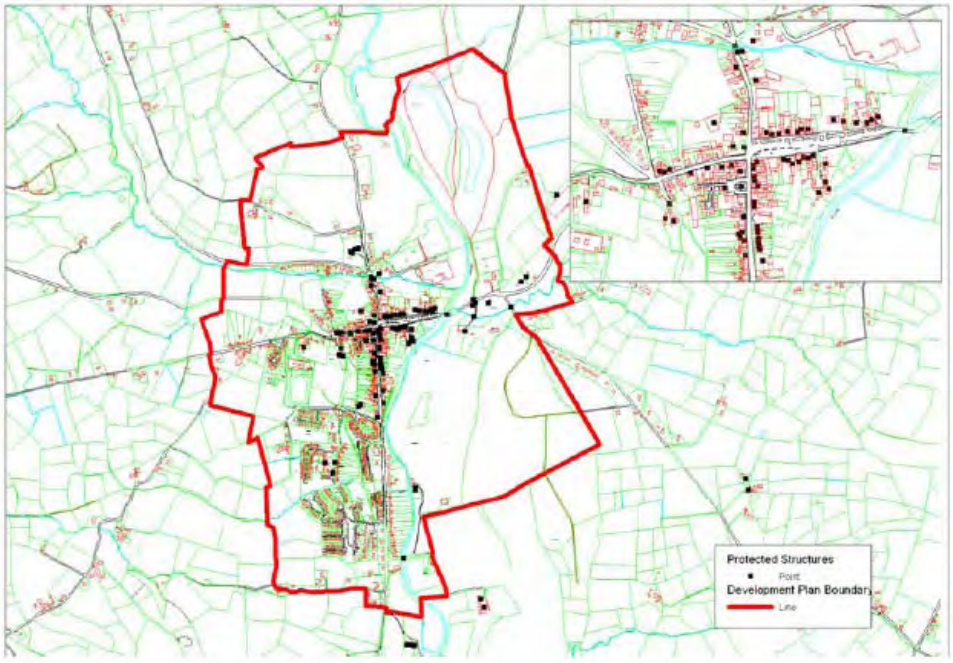

Figure 5.17: Castlecomer National Inventory of Architectural Heritage

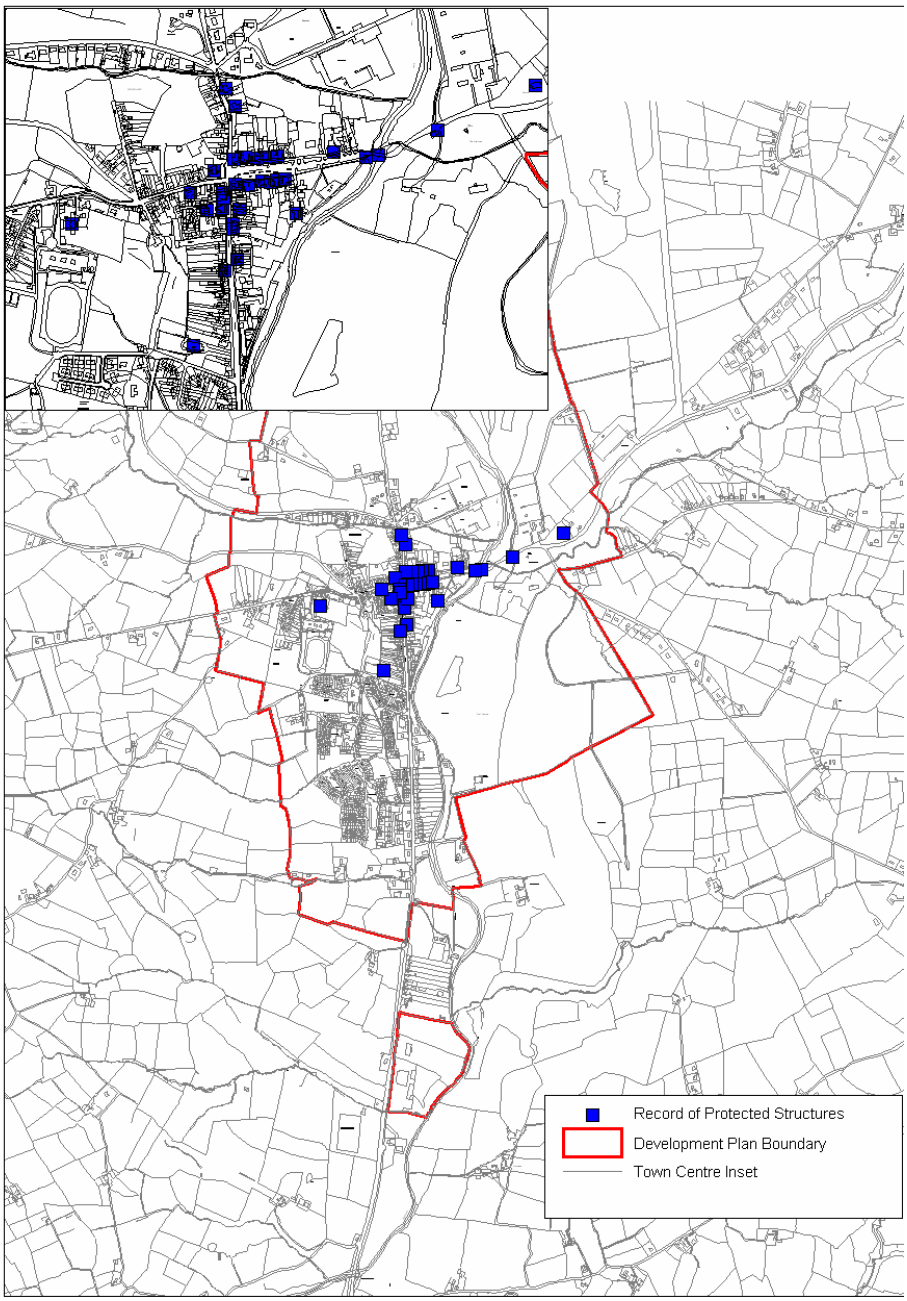

Figure 5.18: Castlecomer Record of Protected Structures

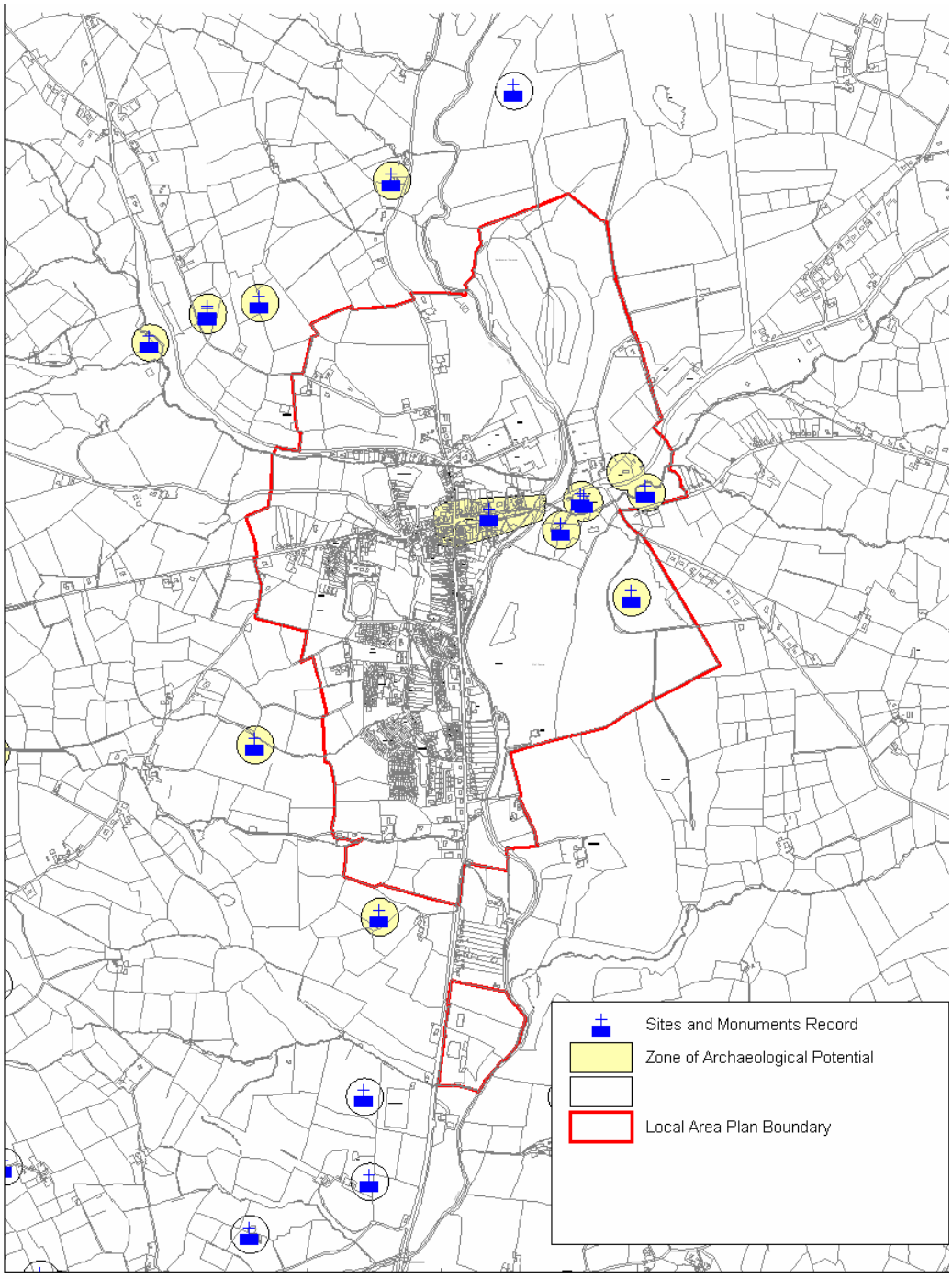

Figure 5.19: Castlecomer Nationally Important Monuments and Sites (Source www.archaeology.ie)

5.11 Landscape

5.11.1 The wider area surrounding the town is known as the Castlecomer Plateau, a large area of upland lying between the river valleys of the Barrow and Nore. The plateau rises steeply from the River Barrow and Nore valleys giving an escarpment type edge to the upland which lies generally at 200m. Its elevated

nature provides significant views over the adjoining lowland river valley landscape and the escarpment sides are a strong visually defining edge to the lowland valleys.

5.11.2 The plateau is almost circular, except to the south-west where it is cut away to form the Dinin River Valley. The town shows many of the visual characteristics of these upland areas such as undulating topography and steep slopes. Its attractive position between two wooded valleys creates a backdrop and enclosure to the main body of the town, in addition to visual richness evident at a number of key viewing points within the town.

5.11.3 The upland landscape is a unique feature in Kilkenny and holds significant landscape value. It is subsequently one of the landscapes most vulnerable and most sensitive to change in the County.

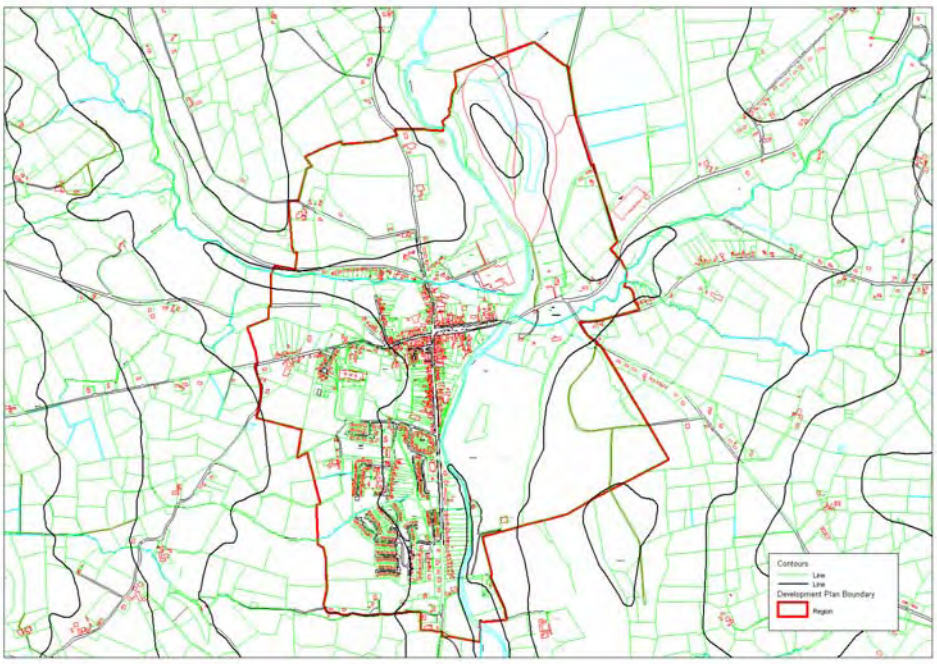

Figure 5.20: Castlecomer contours

5.12 Summary of Environmental constraints and issues

Table 5.5: Summary of Environmental constraints and issues

SEA Topic	Environmental Trends / Issues
Biodiversity	▪ The presence of designated biodiversity sites which may be sensitive to impacts of future development
Population	▪ dispersed population pattern and weak settlement structure within the County. ▪ 2006 census data points toward a number of population trends for consideration: - An older population: the number of persons aged 65 and over has increased at every census since 1961 and now represents 11 per cent of the total population. - Within a generation, the average number of children per woman has declined by 1.3 (from 3.5 to 2.2) giving rise to smaller family sizes.
Human Health	▪ Relatively high levels of deprivation with an assumption with respect to the associated inequalities in human health
Fauna and Flora	▪ Difficulties in obtaining information due to a lack of information with respect to non designated flora and fauna in the town
Soil	▪ Areas of gley soils which are poorly drained
Water	▪ Limited waste water treatment capacity ▪ A combined waste water treatment system that deals with both sewage and overflow during from periods of heavy rain contributing to a deterioration of the water supply ▪ Areas in the town that are possibly at risk of not achieving good status. ▪ River water bodies can be described as being at significant risk of failing to meet good status by 2015. ▪ Lack of additional capacity exists in terms of water supplies
Air	▪ Difficulties in obtaining information at this spatial scale
Climatic factors	▪ Existing areas of flood risk and future implications of climate change
Material assets	▪ Existing areas of flood risk and future implications of climate change ▪ Reliance on private transport
Cultural Heritage including architectural and archaeological heritage	▪ Widespread cultural heritage and areas of potential archaeological / architectural interest
Landscape	▪ Unique upland landscape with special amenity value which creates a backdrop and enclosure for the main body of the town

6. Strategic Environmental Objectives and Indicators

6.1 Background

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

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

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

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

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

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

6.2 Development of SEA environmental objectives

6.2.1 SEA environmental objectives have been developed having regard to the SEA Planning Guidelines, the SEA Directive and the Environmental Report for the Draft Kilkenny County Development Plan 2008 – 2014.

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

6.2.3 The effects on these topics should address positive and negative, short, medium and long-term, permanent and temporary, cumulative and synergistic impacts. As part of this scoping exercise an indicative list of environmental protection objectives is based on Table 4B of the DOEHLG Guidelines (2004). As the SEA Directive only requires the identification of objectives that are relevant to the Plan this element of the scoping process will focus on winnowing down this indicative list to the more pressing environmental objectives.

6.2.4 SEA environmental objectives have been developed to ensure comprehensive coverage of environmental topic areas as set out in Annex 1 of the Directive, by reference to relevant targets and objectives set out in related plans and programmes, and by environmental constraints and issues identified within the baseline analysis(See Chapter 6 / Summary set out in Table 6.5).

6.3 Development of SEA Indicators

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

- Ensuring consistency, where appropriate, with the indicators proposed within the Environmental Report of the Draft Kilkenny County Development Plan
- Identifying existing environmental problems, which will inform the development of SEA objectives and indicators
- The selection process will be guided by the methodology proposed by Donnelly et al (2006)
- A limited number of objectives and indicators will be used, which will keep the assessment and monitoring manageable and strategic

6.3.2 Environmental issues defined as a result of the assessment of baseline data and this scoping process will inform the final selection of an appropriate indicator set and **Table 6.1** will be amended accordingly. Ultimately they will also be determined by the availability of data and monitoring of this data that takes place.

6.4 SEA Objectives and Indicators

6.4.1 **Table 6.1** matches SEA objectives to suitable indicators for the measurement and monitoring of the effectiveness of the plan. Where appropriate, indicators have been taken from the Environmental Report for the Draft Kilkenny County Development Plan 2008 – 2014 in order to avoid duplication.

Table 6.1: SEA Objectives and Indicators

	Environmental Objective	Indicator	SEA Topic Areas
1	Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development	Loss of habitats and species (CDP)	Biodiversity, flora and fauna
2	Improve the socio-economic profile of Castlecomer	Deprivation index – improvement in current status	Population and Human Health
3	Prevent pollution and contamination of groundwater	Faecal Coliform counts per 100ml of groundwater (CDP) New developments granted permission which cannot be adequately served by the current wastewater treatment plant Estimated levels of water supply and wastewater infrastructure required to serve new development	Water
4	Protect and improve river water quality in Castlecomer	Biotic Quality Rating (Q value) (CDP)	Water
5	Protect and improve water supply	Levels of E-Coli present in drinking water Developments granted permission which cannot be adequately service by current water supply	Water and Human Health
6	Reduce vulnerability to effects of climate change, including flood risk	Developments granted permission on flood plain / unauthorised development on floodplain Recorded flooding episodes	Climatic factors / Material Assets
7	Protect and conserve Castlecomer's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows	Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP) Known loss of such sites or structures	Cultural Heritage
8	Protect and enhance valued natural and historic landscapes and features within them, including scenic views	Loss of landscape Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)	Landscape

9	Protect and enhance soil and/or air quality.	Area of brownfield land Available	Soil, Air, Human Health

7. Assessment of Plan Alternatives

7.1 Introduction

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

7.1.2 Alternatives must be reasonable, realistic and capable of implementation, and should represent a range of different approaches within the statutory and operational requirements of a plan. However, the position of the plan within the decision making hierarchy predetermines the scope of strategic alternatives available. The Castlecomer Local Area Plan is framed by the policy context set by the higher levels of plan making, such as the South East Regional Planning Guidelines and the Kilkenny County Development Plan.

7.1.3 This chapter provides a brief description of each scenario, compares each scenario against the environmental objectives and outline the reasons for selecting the preferred alternative. Zoning maps are presented to illustrate the potential extent of development for each plan scenario and the planning and environmental impacts of each are described.

7.2 Plan Scenarios

7.2.1 Taking in account the higher level policy constraints, the following strategic options for the future development of Castlecomer will be considered:

- **Alternative 1:** 'Business as usual'; sets out a scenario where the existing plan is allowed to continue without review.
- **Alternative 2:** 'Unlimited development' sets out a scenario where the future growth in Castlecomer reflects requests for additional zoning as outlined in the plan.
- **Alternative 3:** 'Consolidate the town' sets out a scenario where additional zoning requirements reflect the needs of the town and support the vitality and viability of the town centre.

Alternative One – 'Business as Usual' / Do Nothing

7.2.2 The baseline chapter sets out the key environmental characteristics of Castlecomer providing an indication of environmental issues that the area faces. The collection of baseline information also provides an indication of trends and enables an understanding of how the environment would change over time without the implementation of the LAP. The 'Business as Usual' scenario (do-nothing) represents a continuation of present trends, without any policy changes or infrastructural improvements.

7.2.3 The 'Business as Usual' or 'do nothing' scenario alternative represents a continuation of the existing zoning and policy objectives within the Castlecomer Local Area Plan 2002 – 2008. This approach would constrain type and quantum of growth to the capacity available within existing zonings and would constrain development of underused or opportunity sites where this would require zoning amendments.

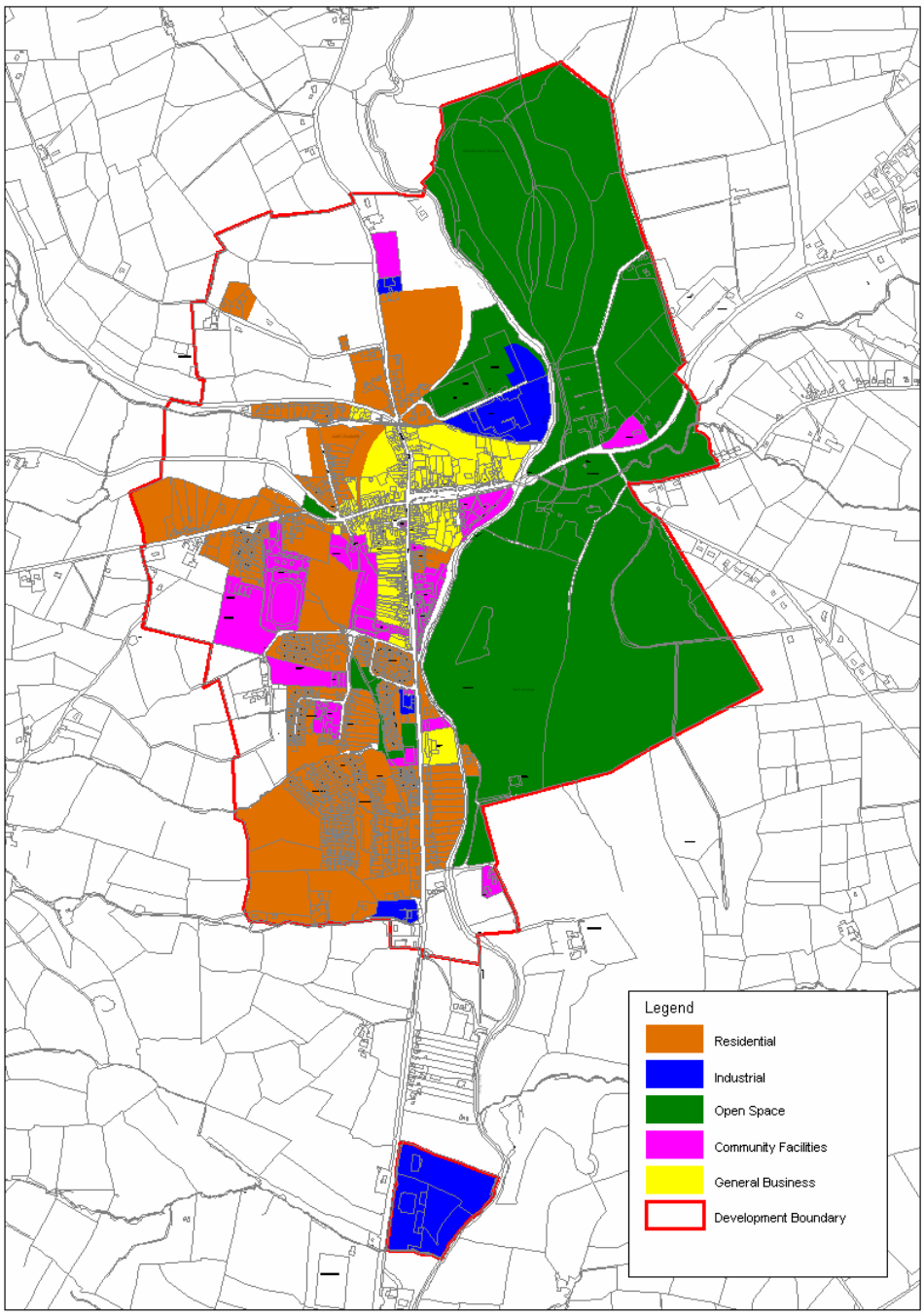

Figure 7.1: Alternative One

Option 1: Summary of effects

7.2.4 Alternative 1 is a continuation of the current Local Area Plan and associated zoning allocations. This approach would have a number of potential effects on the various environmental receptors which will mainly result from the impacts of new development and the associated resources this requires. Given the nature of the town and existing zoned capacity on both greenfield and brownfield locations, new development including housing, employment, retail, community may result in the removal and loss of soil, the need for additional wastewater treatment infrastructure and additional freshwater supply. The impact of new

development on water quality will depend on the provision of additional waste water treatment facilities. The lack of adequate supply of water may constrain new development and have direct and indirect impact on the health and wellbeing of the population in the town.

7.2.5 Where this development is located on greenfield sites this will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows. Where this is located close to the Dinin River it may result in increased flood risk, impacts on designated biodiversity sites and poor water quality due to run off.

7.2.6 Future impacts arising from new development in relation to groundwater and river quality should be mitigated through the provision of additional waste water treatment infrastructure.

7.2.7 Town centre development may have potential impacts on cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures and national inventory of architectural development. Those structures recorded on the NIAH but not listed on the RPS are particularly vulnerable to the impacts of new development. Continued dereliction in areas of the town centre also presents significant issues in terms of the historic environment. This trend is likely to worsen as a result from a business as usual strategy. Development of significant height in the town centre and development in upland areas may also have a negative impact on cultural heritage and landscape quality.

7.2.8 This alternative includes zoning on lands that are liable to flooding and this is likely to result in damage to material assets, pose a risk to human health and wellbeing and, depending on the adjacent land uses, may result in an adverse impact on water quality.

7.2.9 Although there is currently no information on air quality in the town, there is no specific objective to provide new routes that would promote sustainable forms of transport. A high reliance on private transport with no prospect for improvements to public transport provision in the future is likely to maintain and or increase trends in relation to private car use.

Scenario Two – 'Unlimited Development'

7.2.10 The 'Unlimited Development' alternative is based on the assumption that zoning and policy objectives would reflect all submission zoning requests that were made to the plan during the pre-draft consultation stage. The benefit of illustrating this as an option allows information on the environmental implications of these zoning to be made available.

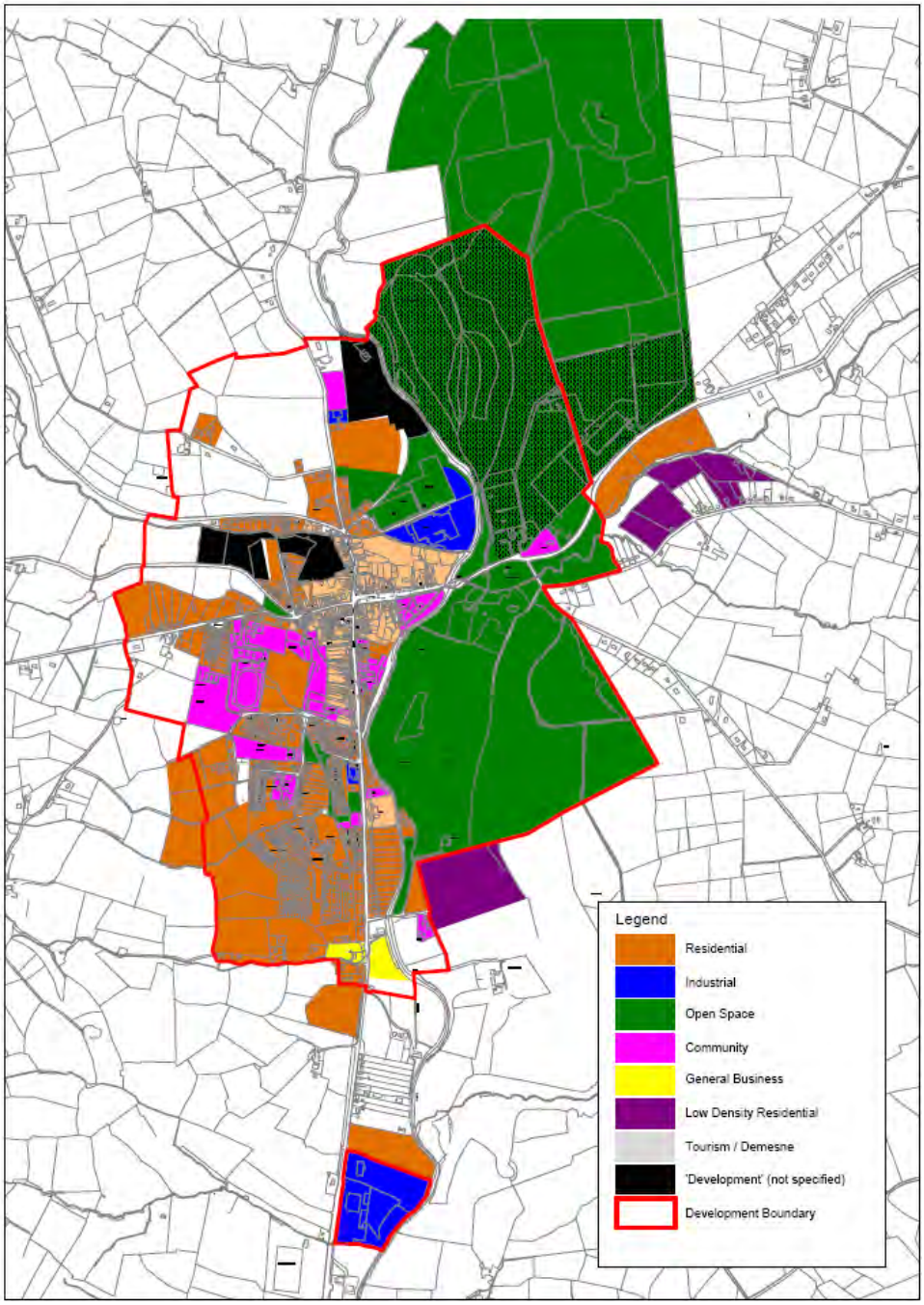

Figure 7.2: Alternative Two

Option 2: Summary of effects

7.2.11 Alternative 2 reflects site specific zoning submissions received during the pre-draft consultation stage. This option proposes limited change to the existing zoning designations within the town boundary which is outlined in the 'business as usual' alternative. A distinction between the two can be made with respect to the quantum and location of additional lands zoned. The majority of the additional zoning requests refer to sites located outside the town boundary and propose a variety of uses.

7.2.12 This approach would have a number of potential effects on the various environmental receptors. These effects are consistent with those set out in Alternative 1 and include:

- Reduction in water quality (this will depend on the provision of additional waste water treatment facilities);
- Supply of water may constrain new development and indirectly impact on the health and wellbeing of the population in the town;
- Development on greenfield sites will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows;
- Where development is in close proximity to the Dinin River it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Reduced quality of groundwater and river quality;
- A higher reliance on private transport with subsequent impacts on air quality and emissions.
- Loss of soil;
- Loss of landscape quality resulting from possible development of upland areas and development of significant height in the town centre
- Impacts on cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures and national inventory of architectural development;
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings. In comparison with Alternative 1 this impact is likely to be significant due to high levels of development located outside the town boundary;
- Depending on the height and form of new buildings, a negative impact on townscape quality and cultural heritage.

7.2.13 The additional quantum of development is likely to exacerbate the significance of a number of these effects. The location of zoned land outside the town boundary will increase the likelihood of negative impacts on water quality, particularly due to the lack of waste water treatment infrastructure to the east of the Dinin River.

Alternative Three – 'Consolidate the Town'

7.2.14 'Consolidate the Town' sets out a scenario where additional zoning requirements reflects the population growth needs of the town and support the vitality and viability of the town centre. It provides for some element of additional zoning in support of sustainable economic activity and seeks to bring about the development of backland areas within the town centre. This approach is consistent with national, regional and county policy requirements.

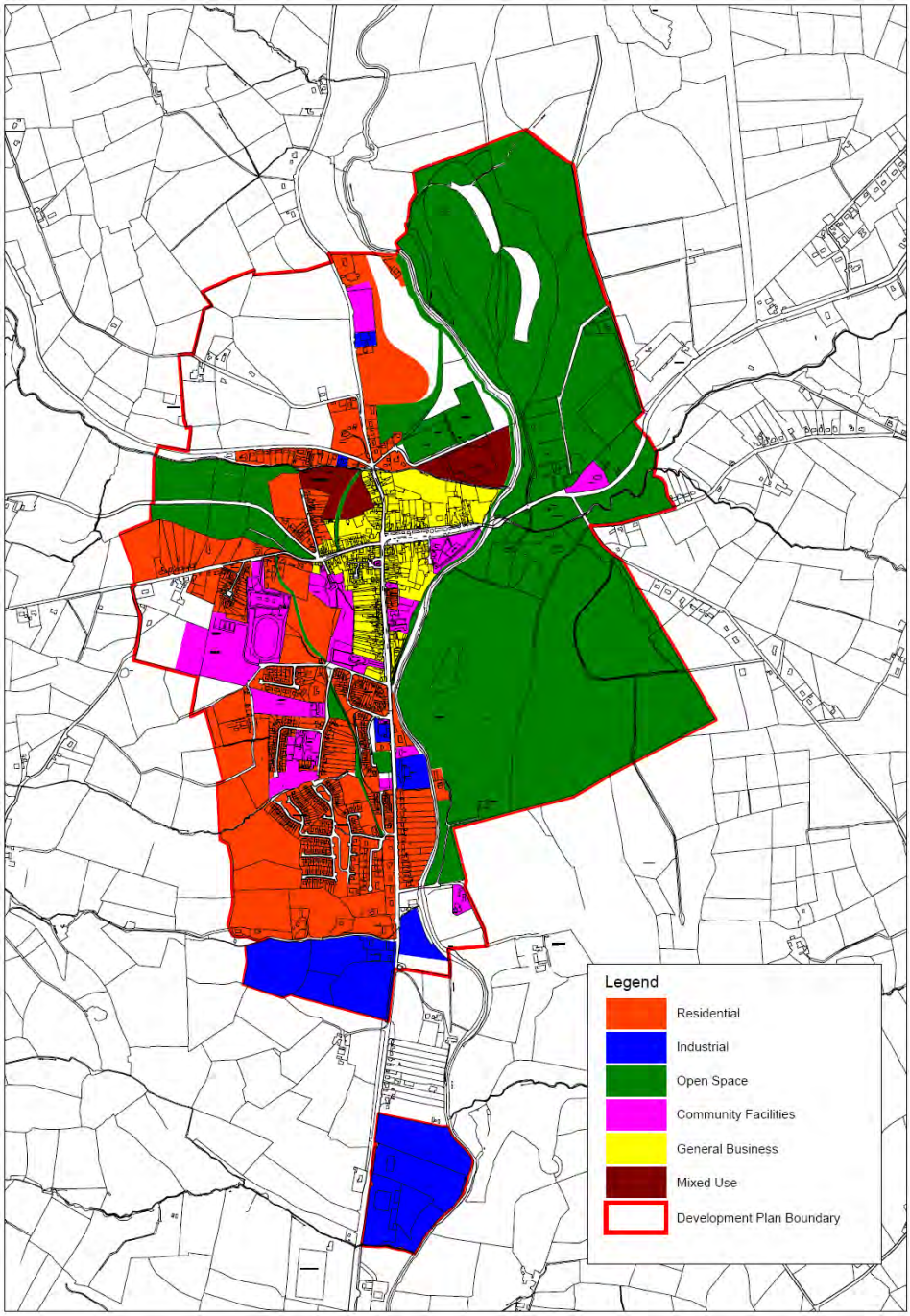

Figure 7.3: Alternative Three

Alternative 3: Summary of effects

7.2.15 In comparison with the business as usual scenario, the development strategy for Alternative 3 proposes changes to existing zoning designations within the town boundary in order to support increased development activity in the town centre and also provides for the realignment of the town boundary.

7.2.16 This approach would have a number of potential effects on the various environmental receptors. These effects are consistent with those set out in Alternative 1 and include:

- Reduction in water quality (this will depend on the provision of additional waste water treatment facilities);
- Inadequate supply of water may constrain new development and indirectly impact on the health and wellbeing of the population in the town;
- Development on greenfield sites will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows;
- Where development is in close proximity to the Dinin River it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Reduced quality of groundwater and river quality;
- A higher reliance on private transport with subsequent impacts on air quality and emissions;
- The loss of soil;
- Possible development of upland areas impacting on landscape quality;
- Cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures and national inventory of architectural development;
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings. To a lesser degree in comparison with Alternative 1 and 2; and
- Depending on the height and form of new buildings, a potentially negative impact on townscape quality and cultural heritage.

7.2.17 The amount of new development proposed is greater than Alternative 1 and less than Alternative 2. Additional zoning outside the town boundary is made on the basis of providing additional employment which will indirectly benefit health and wellbeing by improving the town's socio-economic profile. Despite this, the location of additional zoning proposed under this scenario may result in greenfield development, increased flood risk, impacts to the designation biodiversity site and landscape quality. The additional quantum of development is likely to exacerbate the significance of a number of these effects.

7.3 Comparison of Alternatives

7.3.1 The location of new development according to plan options set out in **Figure 8.4** is likely to have a range of effects which have been evaluated and compared

with respect to the environmental objectives (See **Appendix 3**). This assessment primarily focuses on the general location of new development rather than any detail policy objectives which may be reasonably be expected to be included within a Local Area Plan.

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

- Reduction in water quality (this will depend on the provision of additional waste water treatment facilities);
- Supply of water may constrain new development and indirectly impact on the health and wellbeing of the population in the town;
- Development on greenfield sites will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows;
- Where development in close proximity to the Dinin River it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Reduced quality of groundwater and river quality;
- A higher reliance on private transport with subsequent impacts on air quality and emissions;
- The loss of soil;
- Possible development of upland areas impacting on landscape quality;
- Cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures and national inventory of architectural development; and
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings.

7.3.3 It is possible to make a number of distinctions between each strategy with respect to the location of new development.

Alternative 1: Development within the existing town boundary

- Continuation of existing trends and impacts highlighted **Section 7.3.2.**

Alternative 2: Development outside the town boundary to the east and south of the town

- Continuation of existing trends and impacts highlighted **Section 7.3.2** in addition to site specific impacts associated with development in east and south of the town (water quality, designated biodiversity sites, flood risk). Town expansion is likely to increase levels of unused sites and dereliction in the town centre and increase levels of unsustainable forms of transport.

Alternative 3: Changes to some zoning designations within the town centre and expansion of the town boundary to the south of the town

- Continuation of existing trends and impacts highlighted **Section 7.3.2** in addition to site specific impacts associated with the redevelopment of town centre sites development in the south of the town (designated biodiversity sites, flood risk). Consolidation of the town within the development boundary is likely to improve vitality and viability of the town centre, improve accessibility to services and reduce reliance of private transport, encourage the re use underused land and buildings and the efficient use of existing infrastructure.

7.3.4 The significance of a number of these effects is more likely as quantum of

development increases. Alternative 2 proposes the highest quantity of new development. For the reasons outlined above, Alternative 3 providing for the least damaging outcome and is the preferred strategy for the town.

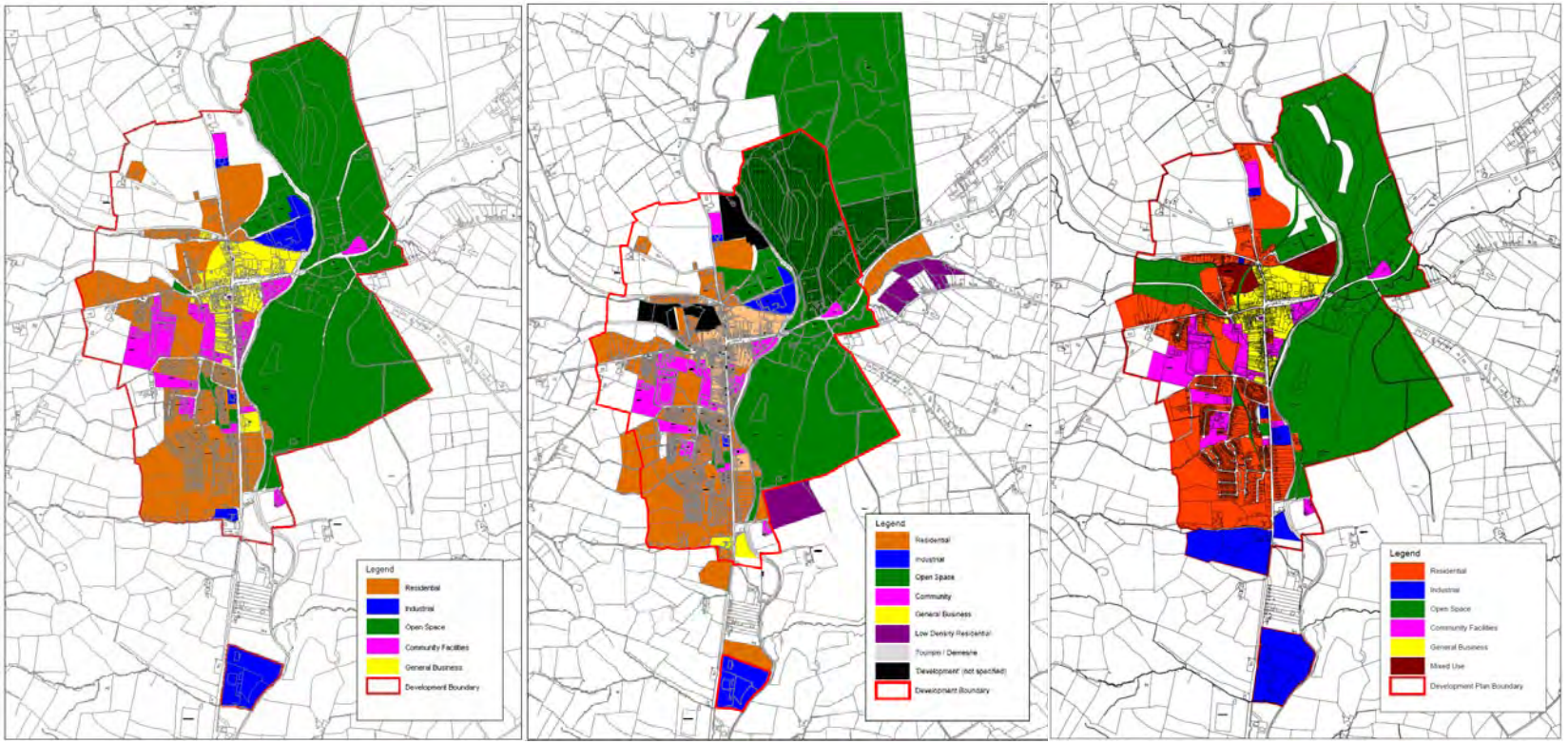

Figure 7.4: Alternative Development Strategies

8. Evaluation of the Likely Significant Effects of the Draft LAP

8.1 Introduction

Reasons For Selecting The Preferred Strategy – Alternative 3

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

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

8.1.4 The preferred plan strategy sets out specific development objectives, which are subject to assessment in the context of each of the environmental protection objectives. An assessment has also been carried out on the detailed policies which flow from the strategic objectives. This has been completed through the use of matrices set out in **Table 8.1**.

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

Significance of the Effects

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

8.2 Assessment of Local Area Plan Objectives against Environmental Objectives

8.2.1 The following Local Area Plan objectives have been generated through analysis and reflection of the general and strategic context of the study area. The plan objectives provide the framework for the future development of Castlecomer:

- To support town centre vitality and viability by extending the town centre;
- To provide high quality residential areas with direct linkages to open space, community and retail facilities;
- Address existing deficits within the recently established developments and provide for future community requirements in childcare, retail, open space and community services in the Castlecomer area;
- Protect and enhance the character and integrity of existing natural and built environments;
- Facilitate sustainable economic development through support for tourism development and provision of a new industrial area to the south of the town;
- Improve linkages between the town and the Castlecomer Demesne;
- Support the re use of land and buildings, particularly though backland development; and
- To seek a high level of design quality in all new development.

Table 8.8.1: LAP Objectives Assessment Matrix

LAP Objective	SEA Objective									Comments
	1	2	3	4	5	6	7	8	9	
1. To support town centre vitality and viability by extending the town centre	O	✓	O	O	O	O	✓	O	?	(2) Improving the town centre should have a positive impact on the local economy and help to protect and conserve the cultural heritage within the town centre. (7) Policy should consolidate town centre and have an overall positive impact in that piecemeal development elsewhere in the town is kept to a minimum. (9) Redevelopment of the town centre may help to reduce pressure for development on greenfield sites.
2. To provide high quality residential areas with direct linkages to open space, community and retail facilities	O	✓	?	O	?	✓	O	O	X	(2) Provision of open spaces and permeable neighbourhoods should have a positive impact on the overall health of the population. (3) (5) Residential development depends on wastewater treatment and water supply capacity being provided for. (6) Flood risk should be reduced where residential development is planned to avoid flood plains as well as increasing local walking opportunities within the town and thus reducing car-borne traffic. (9) Development on greenfield sites may have a negative impact on soil resources
3. Address existing deficits within the recently established developments and provide for future community requirements in childcare, retail, open space and community services in the Castlecomer area	O	✓	O	O	O	O	O	O	O	(2) Provision of community facilities to meet the needs of the population should contribute towards improved socio-economic profile of the town.
4. Protect and enhance the character and integrity of existing natural and built environments	✓	✓	✓	✓	O	?	✓	✓	O	(1) (3) (7) (8) Objective should have positive effects on SEA objectives related to preserving Castlecomer's natural and built environment and cultural heritage.

											(2) Protection and improvement of Castlecomer's natural environment should help improve human health.
5.	Facilitate sustainable economic development through support for tourism development and provision of a new industrial area to the south of the town	?	✓	?	?	O	?	✓	O	X	(1) The impact of this objective depends on the quality of the proposed new industrial area and its importance in terms of natural habitats and species. (2) Positive impact on local economy of Castlecomer in terms of employment opportunities created. (3) (4) Impact on groundwater and river water quality depends on proximity of site to river and measures taken to prevent industrial run-off. (6) Flood risk dependent on location of industrial area. (7) Tourism development should include the protection and conservation of the town's cultural heritage. (9) Development on greenfield sites may have a negative impact on soil resources.
6.	To improve linkages between the town and the Castlecomer Demesne	O	✓	O	O	O	?	O	O	O	(2) Objective should have positive socio-economic impacts through improving accessibility to important recreational areas. (6) Policy could be amended to refer to pedestrians and cycling linkages, thus reducing car-borne traffic from the town to the Demesne.
7.	Support the re use of land and buildings, particularly though backland development	✓	?	?	?	O	✓	O	✓	✓	(1) (8) Objective should have positive impacts generally in that it will reduce to a certain extent, greenfield development elsewhere in the town, thus protecting habitats and species from development. (6) Avoiding development on flood plain (9) Re use of existing land and buildings is likely to protect existing soil resources

Table 8.2: LAP Policy Assessment Matrix

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Town Centre and Retail Development										
Town Centre Improvements **TC1**: Town centres should provide a high-quality and safe environment if they are to remain attractive and competitive. In order to maintain and enhance the quality of the town centre, the Council will seek to support developments that encourages the appropriate re-use, regeneration of derelict, vacant and underutilised sites, particularly where development seeks to restore features of the historic environment, improve or manage the quality of the public realm and facilitate access to and from the town centre by all modes of transport.	X✓	✓	?	?	?	X✓	X✓	✓	✓	(1) (5) (6) (8) (9) Re-use of buildings reduces development pressure on greenfield sites with subsequent benefits on a local scale for biodiversity, soil and important landscapes. (6) provides for efficient use of existing infrastructure and reduces the need to travel long distances, which comprises a cumulative beneficial impact with respect to climate change. (1) (6) A number of brownfield sites are located in close proximity to the River Dinin which may over the long term impact on flood risk and designated biodiversity sites. (2) Improving / managing the quality of the public realm should enhance the image of the town centre thus making it a more attractive destination both commercially and from a tourism perspective. (2) The increased use of sustainable transport, including walking and cycling, will help improve the socio-economic profile of the town, primarily through improved human health and reduced traffic congestion in the town (cumulative positive impacts). (6) Cumulative beneficial impacts of more sustainable forms of travel e.g. walking and cycling. (7) By improving / managing the public realm,

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
										aspects of Castlecomer's cultural heritage should be better preserved in the long term through reduction of vehicles and movement in those areas. (7) (8) Policy will support the re use of historic buildings. A large proportion of brownfield sites are located within or nearby a zone of archaeological potential. Depending on the scale of the development this could have a permanent negative effect on cultural heritage. **Mitigation:** Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin. Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area.
Retail Strategy **R1:** The 2007 Review of the County Retail Strategy identifies the need to enhance vitality and viability of the town and to achieve this through a substantial improvement in its retail floorspace to achieve designation as a Tier 2 Level 2 Sub County Town Centre in the County Retail Hierarchy.	X?	O	?	?	?	O	O	O	✓	(1) The IJM development opportunity site is located in close proximity to the SAC (6) Provides for efficient use of existing infrastructure and reduces the need to travel long distances, which comprises a cumulative beneficial impact with respect to climate change. (4) (5) Minimising the deterioration of water quality will be dependent on the improvement of

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
It is therefore the policy of this plan to: ▪ To deliver the objective of the County Retail Strategy and provide framework to ensure that the vitality and viability of Castlecomer is sustained and enhanced and retail needs are being met on an efficient, equitable and sustainable basis; ▪ Improve the retail offer and provide retail floorspace by identifying a number of town centre opportunity sites including the current IJM factory to the north of the High street and at the Glanbia premises; ▪ Ensure that new provision builds on opportunities provided by existing assets such as the Castlecomer Estate Yard; and ▪ Maximise the opportunity for direct pedestrian links to the Square from significant redevelopment opportunities.										the current water supply and wastewater treatment. In the absence of these infrastructural improvements there may be cumulative adverse impact on water quality, which may be permanent and or long term with respect to water quality. **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure buffer for new development between new development and SAC
New Retail Development **R2:** The centre of Castlecomer will be the focus of all major new retail development in the town (defining the retail core) and the Council will normally permit the proposal whereby the development: ▪ Is consistent with the County Retail Strategy; ▪ Improves and enhances pedestrian links and movement in the town, contributing to access for all; ▪ Is well integrated with the existing centre by respecting the building line of the existing urban environment and, where appropriate, building up to the edge of the curtilage, providing for linked trips to	O	✓	?	O	?	✓	✓	✓	✓	(2) Policy may result in additional retail developments and facilities which will provide additional employment opportunities and improve access to services for the local population. (6) (9) The location of future development in the town centre may reduce distances travelled by car and minimise greenfield development. (3) (5) New development will be dependent on the improvement of the current water supply and wastewater treatment. (7) (8) Policy seeks to ensure that new development positively reflects the town's historic fabric and significant townscape value, but does not prescribed measures such as visual impact

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
the remainder of the centre and contributing towards improving the environmental quality; and ▪ Positively reflects the town's historic fabric and significant townscape value.										assessment or archaeological reports. **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area. For development located on or close to the high street and particularly for buildings that may be visually prominent, applicant should seek to submit visual impact assessments.
Quantity of New Retail Floorspace **R3:** The County Retail Strategy sets out the role and function of Castlecomer within the retail hierarchy providing guidance on the distribution of new floorspace. The Retail Strategy defines Castlecomer as a Tier 2 Level 2 Sub County Town and recognises that the retail offer of the town needs to be improved substantially in order to meet its objectives to reach Tier 2, Level 2 status. The distribution of new floorspace should be linked to the retail hierarchy for the County and should be appropriate in scale and	O	✓	O	O	O	O	O	O	O	(2) This policy supports the provision of additional retail floorspace in the town which may result in additional employment opportunities and improve access to services for the local population.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
character to the hierarchical role of the centre. The type of shopping that is appropriate to Castlecomer's level in the retail hierarchy includes middle and lower order comparison, tourism related comparison and convenience retailing. It will not be appropriate to prescribe what the capacity potential for additional floorspace is in the town and in general it will be subject to the assessment criteria for retail developments being met where proposals are above the 500m² (gross) threshold set for both convenience and comparison floorspace.										
Residential										
Settlement Strategy **RES1**: In line with the Development and settlement strategy, it is a specific objective of the Local Area Plan to consolidate settlement within the town boundary and provide a number of opportunity sites within this area for new housing development.	X?	O	?	O	?	?	O	✓?	✓?	(1) (9) Policy restricts development to that within the development boundary, thus preventing sprawl outside the town and resultant negative impacts on natural habitats and species. However, loss of greenfield sites is also likely to occur. (3) (5) New development will be dependent on the improvement of the current water supply and wastewater treatment. (6) Impact is potentially negative but this is dependent on location of new residential development and whether this is within floodplain.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
										(8) (9) Dependent on location of opportunity sites. **Mitigation:** Require the preservation of hedgerows within new development Establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions and other factors as appropriate. Ensure that adequate capacity in the waste water treatment plan is available to serve all new development.
Sustainable Residential Development **RES2:** Proposals for residential development should have regard to the Draft Guidelines on Sustainable Residential Development in Urban Areas, and in particular, the objective of limiting the size of individual proposals to 10% - 15% of the existing housing stock. In Castlecomer, the existing housing stock is approximately 660 units, which provides a basis for an indicative maximum range of 66 - 99 units, for development proposals.	O	O	O	O	O	O	O	✓X	O	(8) Impact dependent on approach taken to development i.e. incremental increases in housing stock may have long term negative cumulative impacts however this approach can also be more sympathetic to the landscape as a result of less large-scale changes and less negative impacts on the landscape. Impact is therefore dependent on the quality of the new development. **Mitigation:** Development in upland areas should be accompanied by an assessment of the potential landscape and visual impacts of the proposed development.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Design and Layout of New Residential Development **RES3:** In terms of design and layout, new residential development that are considered significant should demonstrate good housing design and submit design statements in conjunction with planning applications, explaining the principles and concept behind the design, demonstrating how the proposal relates to its wider context, meets the following urban design objectives and principles: ▪ Consider and reflect the physical, social and environmental context of the town; ▪ Protect the Town's historic fabric and positively contribute towards its identity and character; ▪ Creating places of distinctive character and legibility; ▪ Improve the public realm and provide for public and private spaces that are clearly distinct and contribute to continuity and enclosure; ▪ Contribute to improvements in safety by enhancing natural surveillance, providing active street frontages, and ensuring appropriate enclosure and overlooking of public spaces; ▪ Supporting increased permeability, strengthening the linkages between places and contributing to a well defined movement network particularly in relation to walking, cycling and access by public transport; ▪ Ensuring that buildings and spaces can adapt to changing environmental, social and economic circumstances, particularly climate change;	✓	✓	?	O	?	✓	✓	✓	O	(1) (7) (8) Policy includes aim to enhance and protect built and natural heritage through the construction of residential developments. (2) (6) Sustainable and energy efficient residential developments should lead to a healthier and more cost efficient environment in the long term and an improved socio-economic profile, in particular with regard to human health. (3) (5) The impact of new development will be dependent on the improvement of the current water treatment infrastructure. (7) Not clear whether policy will prevent impacts on flood plains **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
▪ Creating variety and choice to support mixed communities, develop the identity of a place and ensure that all new developments are accessible to all; and ▪ Supporting improvements to air and water quality through good quality landscaping which can support biodiversity.										
Transport and Connectivity										
Connectivity and Permeability **T1**: Based on a general assessment of connectivity and permeability with respect to new and existing zoning designations, it is the objective of the Castlecomer Local Area Plan to support and facilitate sustainable transport within the town through measures to improve connectivity, reduce traffic congestion, reconfigure car parking and providing for sustainable forms of transport such as walking and cycling.	O	✓	O	O	O	✓	O	O	O	(2) The increased use of sustainable transport, including walking and cycling, will help improve the socio-economic profile of the town, primarily through improved human health and reduced traffic congestion in the town (cumulative positive effects). (6) Encouragement of walking and cycling should have positive cumulative effects by decreasing the carbon footprint of the town by reducing car travel in the town.
Walking and Cycling **T2:** All development and in particular education facilities, retail and residential development, will be required to facilitate walking and cycling in Castlecomer by: ▪ Providing safe and direct new routes where this would improve permeability; ▪ Improving the quality of existing routes in terms of overlooking, improved	O	✓	O	O	O	✓	O	O	O	(2) The increased use of sustainable transport, including walking and cycling, will help improve human health and reduced traffic congestion in the town. (6) Encouragement of walking and cycling should reduce carbon emissions by reducing car travel between the town and its demesne.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
▪ pavements and crossings, lighting, signage, appropriate traffic calming and speed reduction measures; and ▪ Where appropriate, providing covered cycle parking stands.										
Employment and Industry										
Employment and Industrial Land **E1:** Employment and industrial activity is important to securing the town's economic future and requires the timely and adequate provision of land for employment needs, including sites at suitable locations for employment related uses. Based on existing opportunities in the town, it is the policy of the Local Area Plan to promote a diverse and sustainable local economy through the designation of sufficient lands for the promotion of employment related uses including facilities to support SME growth, tourism related facilities in support of existing attractions such as the Castlecomer Demesne and Golf Course. This will be facilitated through the provision of an additional employment related area to the West of the Kilkenny Road in addition to mixed use areas within the town centre that, among other uses, can accommodate tourism related facilities.	X	✓	X	X	?	?	?	?	O	(1) Increase in employment / industrial land may have a negative impact on existing greenfield sites which accommodate natural habitats and species. (2) Increase in employment / industrial land should increase local employment opportunities. (3) (4) (5) Increased industrial activity may contribute towards groundwater and river water pollution. Development may also be dependent on improvements in wastewater treatment plant. (6) Development may be dependent on improvement in water supply. (7) Possible negative impact if industrial development is located on or close to any areas of cultural importance / heritage. (8) Possible negative impact of increased industrial development on natural landscapes / views however this will dependent on location of sites. **Mitigation:** Focus development where possible initially on brownfield land and subsequently on land which

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
										does not accommodate habitats and species which may be sensitive to industrial development. Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure measures are put in place at the time of development to minimise potential industrial run-off. Ensure that adequate capacity in water supply is available to serve new development. Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area. Industrial development in areas with sensitive landscapes to be subject to an assessment of the potential landscape and visual impacts of the proposed development.
Type of Employment Development **E2:** New development within newly designated employment areas will be supported where the proposal meets masterplan	X	✓	X	X	?	O	O	O	O	(1) Increase in employment / industrial land may have a cumulative negative impact on existing greenfield sites which accommodate natural habitats and species. (2) Increase in employment / industrial land

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	**Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)**
objectives (see Section 6) and: ▪ Provides high value employment and SME business development in key sectors such as agricultural related employment (e.g. timber, creameries, food processing and distribution, fishing) services and manufacturing ▪ Supports the relocation and expansion of existing industries that improve the local employment base; and ▪ Reflects urban design objectives and principles set out in Chapter 6, particularly with respect to landscaping and visual impacts given the prominence of the proposed employment area with respect to its location at the entrance to the town.										should increase local employment opportunities. (3) (4) Increased industrial activity may contribute towards groundwater and river water pollution. Development may also be dependent on improvements in wastewater treatment plant. (5) Development may be dependent on improvement in water supply. (8) Policy states intention to mitigate visual impacts. **Mitigation:** Focus development where possible initially on brownfield land and subsequently on land which does not accommodate habitats and species which may be sensitive to industrial development. Ensure measures are put in place at the time of development to minimise potential industrial run-off. Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure that adequate capacity in water supply is available to serve new development. Industrial development in areas with sensitive landscapes to be subject to an assessment of the potential landscape and visual impacts of the proposed development.

LAP Policy	SEA Objective									Comments Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	
Flood Risk										
Areas at Risk of Flooding **F1**: In areas at risk from flooding, principally at riverside locations, a precautionary approach will apply and a setback of 10 metres will be required whereby development will not generally be permitted and uses will be constrained. Examples of appropriate uses include recreational facilities, certain types of industry, with the exception of those that require fertiliser storage, and warehousing designed to be flood resistant and/or insensitive. In all cases a flood impact analysis will be required and appropriate design measures will be required for applications on or adjacent to these areas.	✓X	✓	X	X	?	✓X	O	?	O	(1) Many of the areas liable to flooding are also close to designated biodiversity sites. Whilst the policy aims to ensure that new development is setback by at least 10 metres there may be cases whereby development occurs at locations which are also vulnerable to flooding and impacts on designated sites. (2) Reducing and managing the risk of flooding can prevent damage to property and impacts on human health and well-being. (3) (4) (5) In cases whereby development occurs at locations which also vulnerable to flooding this may impact on groundwater and river water quality. (6) Policy will reduce the risk and impact of flooding incidences in the town. (6) Policy may exacerbate risk of flooding for development built on the floodplain. (8) Possible negative impact of increased development on natural landscapes / views however this will dependent on location of sites. **Mitigation:** Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin. Restrict development on the floodplain.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Design of Buildings in Flood Risk Areas **F2**: Appropriately designed development, which is not sensitive to the effects of flooding may be permissible in areas at risk of flooding provided it does not reduce the flood plain area or otherwise restrict flow across floodplains.	X	✓	X	X	?	?✓	O	O	O	(1) Many of the areas liable to flooding are also close to designated biodiversity sites. Development in these areas may impacts on designated sites. (2) Appropriately designed development will reduce the risk of damage to property and impacts on human health and well-being. (3) (4) (5) Development in floodplain may impact on groundwater and river water quality. This policy could be improved by restricting uses that are potentially polluting to groundwater or nearby surface water. (6) Implications of climate change may increase levels of flood risk over time. In the long term, this policy may have an increasingly negative impact by allowing development. **Mitigation:** Avoid development on designated biodiversity sites. Restrict development on the floodplain.
Infrastructure										
Water Supply **IN1**: The Council will endeavour to maintain an adequate water supply sufficient for the development needs of the plan.	O	✓	X✓	O	O	?	O	O	O	(2) Provision of an adequate water supply will help improve human health in the short and long term. (3) Policy should improve quality and supply of water but may impact on groundwater levels.

LAP Policy	SEA Objective									Comments Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	
										Mitigation: Ensure that adequate capacity in water supply is available to serve new development. Ensure that adequate capacity in the waste water treatment plant is available to serve all new development.
Upgrade Existing Waste Water Treatment **IN2**: The Council will endeavour to upgrade the existing Waste Water Treatment facility to accommodate development as proposed in the Draft Plan.	X✓	✓	✓	✓	✓	O	O	O	O	(1) Direct and indirect impacts – may reduce risk of groundwater pollution and subsequent impacts on designated sites. (2) The upgrade should lead to improved health of the population by reducing risk of groundwater pollution. (3) (4) (5) Policy will reduce risk of pollution and contamination of groundwater and river water. **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development.
Environmental Assets										
Open Space **OS 1**: New development should enhance quality of and access to existing open space and where necessary create areas of	X/?	✓	O	O	O	✓	O	✓	✓	(1) Impact dependent on location of new linkages in relation to habitats and species. (2) Improvement of existing and provision of new open space will help contribute towards improved

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
new open space. This will be achieved by: ▪ Creating new linkages between the town and the Castlecomer Demesne and ensuring that opportunities for riverside access are created and maintained; ▪ Where for smaller developments, financial contributions are deemed appropriate, improving the quality of existing Class II spaces; ▪ Extending the hierarchy of public open spaces within the plan and at a minimum require the provision of Class II / neighbourhood park within the Ballyhimmin Residential Development Area, and provide for a flood risk buffer and linear park, where appropriate, alongside the River Barrow and River Nore SAC. ▪ Class III Informal / Casual open space will be provided within the majority of areas. These areas will be landscaped and will provide an informal amenity for the surrounding neighbourhood area. ▪ Address the quantitative deficiency in open space that is likely to result in the long term; and ▪ Meeting design principles set out in the County Development plan and specifically designing for active frontages and natural surveillance.										human health. (6) Policy will support the management of flood risk through the provision of a riverside buffer. (8) (9) This policy will protect landscape and soil quality. **Mitigation:** Establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions and other factors as appropriate.
Natural Heritage / Biodiversity **NH1**: In seeking to protect and enhance the natural environment, the Council will seek to: ▪ Protect natural heritage sites designated in National and European legislation, specifically the Rivers Nore and River Barrow SAC (See NH2);	✓	✓	✓	✓	✓	✓	O	✓	O	(1) Policy seeks to protect designated habitats and species. (2) Protection and improvement of Castlecomer's natural environment should help improve human health in the long term. (3) (4) (5) Protection and enhancement of the natural environment should protect and improve

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
▪ Protect and incorporate existing biodiversity features such as hedgerows and surface water features into the design and construction of new development and public realm; and ▪ Enhance the biodiversity value of existing open spaces.										the quality of groundwater and river water. (6) Policy seeks to manage risk of flood with the provision of a riverside buffer. (7) Policy seeks to protect hedgerows. (8) Policy should see the protection of historical and natural landscapes.
The Rivers Nore and River Barrow SAC **NH2**: The River Nore has considerable potential both waterside and landside to be used as recreational asset for the town and the Local Area Plan will seek to promote the natural amenity potential of this site subject to: ▪ To protection of this site in accordance with National and European legislation ensuring that any development in or near the SAC will avoid any significant adverse impact on the features for which the site has been designated. ▪ Consultation with the prescribed bodies and relevant government agencies when assessing developments which are likely to impact on designated natural heritage sites or those sites proposed to be designated. ▪ To require an appropriate environmental assessment in respect of any proposed development likely to have an impact on a designated natural heritage site, or those sites proposed to be designated.	✓	✓	✓	✓	O	✓	O	✓	✓	(1) Policy aims to protect natural habitats and species. (2) Policy encourages recreational uses, thus contributing towards improved human health in the long term. (3) (4) Policy aims to protect the natural environment of the river, which should include protection of groundwater and river water quality. (6) Policy looks to promote recreational uses waterside, thus providing a buffer from development in the flood plain. (8) Policy seeks to avoid any adverse impacts on the natural environment / landscape of the River Nore. (9) Protection of sites should include protection of air and soil quality.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Efficient Use of Environmental Resources **ER2**: New development should ensure the efficient and effective use of environmental resources by: ▪ Providing high levels of energy and water efficiency and a sustainable approach to the use of materials ▪ Having regard to sustainable energy considerations set out in Department Guidelines on Quality Housing for Sustainable Communities (2007) and Chapter 10 of the County Development Guidelines. ▪ Providing and supporting continuing management sustainable drainage methods;	?	O	✓	✓	✓	✓	O	O	O	(1) Impact dependent on location of new development. (3) (4) (5) Implementation of SuDS should curtail the pollution and contamination of groundwater, surface water and subsequently river water. SuDS can also enhance ground water quality. (5) Policy seeks to preserve / protect the water supply. (6) Policy seeks to preserve energy supplies thus providing a positive cumulative effect with regard to climate change. **Mitigation:** Establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions and other factors as appropriate. Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin.
Cultural Heritage - Architectural Conservation Areas										
Designation of Architectural Conservation Area **AC1**: Kilkenny County Council considers that core of Castlecomer town comprises an area of special architectural, archaeological, historic interest, presents an attractive townscape and is worthy of protection. It is therefore proposed	O	✓	O	O	O	O	✓	✓	O	(2) Policy should enhance the image of the town centre thus making it a more attractive destination both commercially and from a tourism perspective. (7) Policy aims to enhance and protect cultural heritage.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
to designate this part of the Square, as an Architectural Conservation Area. A detailed character appraisal will be completed that will define in more detail the features of special interest. The purpose of this appraisal will be to define the exact boundary of the ACA and support the development of more detailed conservation objectives and guidance for this area. Figure 5.2 illustrates the general location and boundary of the proposed Architectural Conservation Area										(8) Policy should preserve the historic streetscape of the town centre.
Purpose of Architectural Conservation Area **AC2**: The purpose of designating the Architectural Conservation Area is to encourage the retention and restoration of the existing buildings and streetscape in a manner which respects its special character and consolidates that character with appropriate new developments when opportunities arise. In order to preserve the special interest of the Square in Castlecomer, the Council will require ▪ the retention, repair and maintenance of the buildings which make a positive contribution to the character, appearance, quality and visual coherence of the streetscape of the Conservation Area; ▪ appropriate form of new development to reflect the existing building line and height; ▪ materials and finishes, massing, height, alignment, orientation and window proportions that reflect the existing character of the area; ▪ the protection of the existing landscaping and features within the public realm that contribute to the	O	✓	O	O	O	O	✓	✓	O	(2) Policy should enhance the image of the town centre thus making it a more attractive destination both commercially and from a tourism perspective. (7) Policy aims to enhance and protect cultural heritage. (8) Policy should preserve the historic streetscape of the town centre.

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
character of the town, and ▪ the control of shopfronts and advertising.										
Community Facilities										
Play Space **PS1**: New residential development is required to be consistent with standards set out in the County Development Plan where a minimum of 10 sq. m. of dedicated playable space per residential unit is to be provided as an integral part of each new development. This playable space can form part of the overall open space provision of a development but must be dedicated to play.	O	✓	O	O	O	O	O	O	O	(2) Provision of play space can contribute towards improved levels of children's health.
New Open Space **PS2**: A significant proportion of the town as indicated in Figure 5.3, could be described as deficient in play space. As these primarily correlate to areas for future development, it is a specific objective of the Local Area Plan to ensure that new play facilities are provided at these locations.	✓	✓	O	O	O	O	O	O	O	(2) Provision of open space can contribute towards improved levels of children's health and support biodiversity.
The Provision of Community Facilities **CF1**: Community facilities comprise health clinics, hospitals, schools, churches, shopping facilities, libraries, community halls, burial grounds. The Local Area Plan will ensure that sites are reserved for community facilities as appropriate and [to] seek to remedy the deficiency in existing developed areas. The	O	✓	?	O	?	O	O	O	O	(3) Provision of community facilities to meet the needs of the population should contribute towards improved health of the population. (3) (5) Development depends on wastewater treatment and water supply capacity being provided for.

LAP Policy	SEA Objective									Comments Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	
provision of community facilities will be linked to the increases in the residential population through phasing arrangements in the plan to ensure timely provision.										**Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure that adequate capacity in water supply is available to serve new development.
The Location of Primary Health Care Facilities **CF2**: It is a specific objective of the Plan to allow for the development of a new primary Health Care facility which will be provided by the Health Service Executive over the plan period which may be incorporated on the Riverside mixed use opportunity site. The development of this primary care facility should consider the development brief set out in Chapter 7 and seek to a deliver high quality environment by incorporating: ▪ Quality internal environment and public realm; ▪ Functionality of the care facility whereby public consultation zones and staff zones should be kept separate and interlinked areas designed carefully; ▪ Adaptability of layout, structure and lighting whereby new operational practices can be accommodated; ▪ Inclusive design and access for all, creating a facility and place that everyone can use; and ▪ Landscape features and strengthen links and improve quality of adjacent open space.	O	✓	?	O	?	O	O	O	✓	(2) The provision of a primary health care facility should contribute towards improved access to health care in the town. (3) (5) Development depends on wastewater treatment and water supply capacity being provided for. (9) Policy promotes the reuse of a brownfield site. **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure that adequate capacity in water supply is available to serve new development.
Childcare Facilities	O	✓	?	O	?	O	O	O	O	(2) Policy should improve socio-economic status of the town by increasing labour force and

LAP Policy	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
CHF1: Having regard to the existing distribution of childcare facilities in the area, new residential development will be required to contribute to the provision of childcare facilities in accordance with the standards set out in the 2001 'Guidelines for planning authorities relating to childcare facilities', where an average of one childcare facility (minimum 20 childcare places) for each 75 dwellings will be appropriate. Consultation should be undertaken with the County Childcare Committee in this regard.										employment opportunities. (4) (6) Development depends on wastewater treatment and water supply capacity being provided for. **Mitigation:** Ensure that adequate capacity in the waste water treatment plant is available to serve all new development. Ensure that adequate capacity in water supply is available to serve new development.

Score	Definition
-1	Significant adverse impact
?	Uncertain impact
1	Significant beneficial impact
0	No relationship, or insignificant impact

Summary of Impacts

8.2.2 The significant effects of the preferred strategy and policies include:

- Impact on water quality (this will depend on the provision of additional waste water treatment facilities);
- Supply of water may constrain new development and indirectly impact on the health and wellbeing of the population in the town;
- Development on greenfield sites will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows;
- Where development in close proximity to the Dinin River it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Reduced quality of groundwater and river quality;
- A higher reliance on private transport with subsequent impacts on air quality and emissions;
- The loss of soil;
- Possible development of upland areas impacting on landscape quality;
- Cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures and national inventory of architectural development;
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings; and
- The presence of areas of high groundwater vulnerability with smaller pockets of extreme vulnerability to the northwest of the town.

Cumulative Effects

8.2.3 Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the Plan (e.g. noise, dust and visual) have a combined effect.

8.2.4 Examples of cumulative, secondary and synergistic effects include loss of tranquility, changes in the landscape, economic decline and climate change. These effects are very hard to deal with on a project-by-project basis through Environmental Impact Assessment. It is therefore at the SEA level that they are most effectively identified and addressed.

8.2.5 Assessment of cumulative effects should:

- focus on identifying the total effect of both direct and indirect effects on receptors. Receptors may include natural resources (e.g. air, water, soil), sections of the population (e.g. people living in particular areas or vulnerable members of the community) or ecosystems and species (e.g. heathland);
- be considered in relation to the nature and extent of the receptors, such as ecosystems and communities, rather than administrative boundaries;
- be considered in relation to effects of policies within a plan and those which may result from interaction with the effects of other plans and programmes; and
- take account of how close the plan, in association with other past, present and likely future actions, will bring the receptors to their capacity/threshold to remain productive or sustainable.

8.2.6 **Table 8.3** sets out an assessment of cumulative impacts by using a shading system to provide a visual representation of where cumulative impacts may occur. By using such an approach, it is possible to see where impacts which alone may appear to be insignificant, have a cumulatively significant impact.

8.2.7 **Table 8.3** indicates levels of impacts and associated shading used to assess cumulative impacts in **Table 8.3**.

Table 8.3: Significant of Impacts

	Impact
	No impact
	Possible negative impact
	Possible significant negative impact

Table 8.4: Assessment of Cumulative Impacts

	1 BIODIVERSITY	2 POPULATION & HUMAN HEALTH	3 GROUNDWATER	4 RIVER WATER QUALITY	5 WATER QUALITY AND SUPPLY	6 CLIMATIC FACTORS	7 CULTURAL HERITAGE	8 LANDSCAPE	9 SOIL & AIR
TC1: Town Centre Management									
R1: Major New Retail Development									
R2: Castlecomer Town Centre Development									
R3: Retail Hierarchy									
RES1: Settlement Strategy									
RES2: Sustainable Residential Development									
RES3: Design and Layout of new residential development									
T1: Connectivity and permeability									
T2: Improvement to walking and cycling facilities									
E1: Employment and Industrial land									
E2: Type of employment development									
F1: Areas at risk of flooding									
F2: Design of buildings in flood risk areas									
IN1: Water Supply									
IN2: Upgrade existing waste water treatment									
OS1: Enhancing Open Space									
NH1: Natural Environment									
NH2: The River Nore									
ER1/2: Efficient use of environmental resources									
PS1: Play space									
AC1: Designation of Architectural Conservation Area									
AC2: Purpose of Architectural Conservation Area									
PS1: Play space									
PS2: New open space									
CF1: The provision of Community facilities									
CF2: The location of primary health care facilities									
CHF1: Childcare facilities									

Summary of Cumulative Impacts

8.2.8 **Table 8.4** illustrates where cumulative impacts of the Plan may arise through the use of shading, the darker the shading indicates the more significant the individual impact may be.

8.2.9 It is evident from the table that significant negative cumulative impacts may occur on the following environmental receptors:

Biodiversity

8.2.10 **Table 8.4** demonstrates that negative cumulative impacts may occur with regard to the biodiversity objective:

Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development.

8.2.11 These impacts result primarily from the loss of greenfield land as a result of various types of development, including for residential and industrial uses. In addition, proposed development in close proximity to the River Dinin may further impact designated habitats and species.

8.2.12 In order to minimise cumulative impacts on biodiversity, the following mitigation measures are proposed:

- Establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions and other factors as appropriate.
- Focus development where possible initially on brownfield land and subsequently on land which does not accommodate habitats and species which may be sensitive to industrial development.
- Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin.
- Restrict development on the floodplain.

Groundwater

8.2.13 The assessment of cumulative impacts at **Table 8.4** also show potential cumulative impacts with regard to the groundwater objective:

Prevent pollution and contamination of ground and surface water

8.2.14 Impacts on groundwater are identified primarily as a result of additional development of various types, including residential, industrial and retail have.

8.2.15 In order to prevent pollution and contamination of groundwater new development and in particularly significant development should avoid areas of extreme or high groundwater vulnerability

River Water Quality

8.2.16 The cumulative effects assessment has identified potential negative impacts with regard to the river water quality objective:

Protect and improve river water quality in Castlecomer.

8.2.17 It is envisaged that negative impacts on river water quality may occur as a result of surface water run off in the vicinity of the River Dinin.

8.2.18 In order to protect river water quality, the following mitigation measure is proposed:

- Ensure that adequate capacity in the waste water treatment plant is available to serve all new development
- Restrict developments in close proximity to the River Dinin

Water Quality And Supply

8.2.19 **Table 8.4** has also identified potential cumulative impacts on water supply, the environmental objective for which is:

Protect and improve water supply.

8.2.20 The cumulative impacts assessment has identified that a number of developments which are addressed through policies in the Plan will place additional demand on the water supply. The following mitigation measure is therefore proposed:

- Ensure that adequate capacity in water supply is available to serve new development.

Climatic Factors

8.2.21 **Table 8.4** has identified a number of policies which individually may have minor negative impacts on climatic factors but add up to have potentially significant negative impacts. The environmental objective for climatic factors is:

Reduce vulnerability to effects of climate change, including flood risk.

8.2.22 A number of potential impacts have been identified in Table 8.4**Error! Reference source not found.**, primarily through possible development on or close to flood plains. The following mitigation measures are therefore proposed:

- Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin.
- Restrict residential development on the floodplain.

Landscape

8.2.23 The cumulative effects assessment has identified potential negative cumulative impacts with regard to the town's landscape, the objective for which is:

Protect and enhance valued natural and historic landscapes and features within them, including scenic views.

8.2.24 Castlecomer is located in a unique upland landscape and therefore a number of policies proposing development could potentially impact on the landscape and views within the town. It is considered that these impacts can be mitigated through the following measures:

- Development in upland areas or areas with sensitive landscapes should be subject to an assessment of the potential visual impacts of the proposed development.
- Appropriate screening of new development in visually prominent areas

Soil

8.2.25 The cumulative effects assessment has identified possible cumulative impacts with regard to soil, the environmental objective for which is:

Protect and enhance soil and / or air quality

8.2.26 Cumulative effects with regard to this objective have primarily been identified as a result of loss of soil due to greenfield development. With regard to soil, the following mitigation measure is therefore proposed:

- Encourage the reuse of soils generated from housing and other development.

9. Significant environmental effects of Proposed Amendments

9.1 Evaluation of the Likely Significant Effects of Site Specific Proposals

9.2 Proposed Zoning

Table 9.1: Previous, Draft and Proposed Amendment Zoning

	Current (ha)	Draft (ha)	Proposed Amendments (ha)	Remaining Capacity (ha)
Residential	65.59	67.42	65.8	25.4 (excluding mixed use areas)
Low Density Residential	0	0	1.7	1.7
Industrial	13.39	23.04	28.5	13.20
Open Space	128.05	136.74	137.1	-
General Business	15.52	14.30	13.8	-
Community	17.02	18.57	19.6	-
Mixed Use	0	5.72	6.5	6.5
Total	239.57	265.79	273	

9.3 Evaluation of the Likely Significant Effects of Site Specific Proposals

9.4 Garda Barracks Site, Barrack Street

9.4.1 The Garda Barracks site is located on Barrack Street, to the north east of Castlecomer Community School. The Draft Plan proposed to zone the site 'residential', but this has subsequently been amended to part 'residential' and part 'community facilities'.

Figure 9.1: Garda Barracks Site, Barrack Street

9.4.2 The Garda Barracks are a designated a protected structure in the Kilkenny County Development Plan 2008 – 2014 (RPS Ref: C486). The Barracks are also identified on the NIAH as having regional importance.

9.4.3 [The Garda Barracks have recently been identified for development under the Affordable Housing Initiative and ownership is due to be transferred from the Office of Public Works (OPW) to the DoEHLG.]

Potential Environmental Issues

9.4.4 The decision to split the Garda Barracks site allows Castlecomer Community School to make use of part of the site for community use facilities. The continued residential zoning on the site should support the re use of a structure of historical significance.

9.5 Industrial Zoning to the North East of the Town

9.5.1 Proposed Amendments include an additional industrial zoning to the north east of the town. The town boundary has been amended to incorporate the revised zoning.

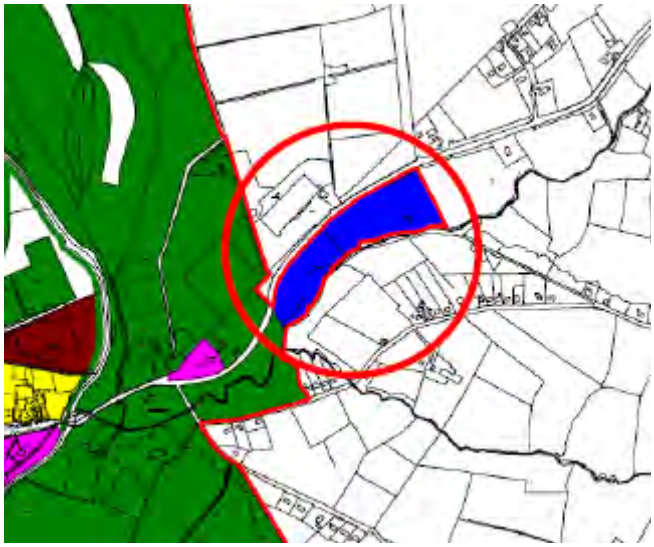

Figure 9.2: Industrial Zoning to the North East of the Town

Potential Environmental Issues

9.5.2 The retail planning guidelines recommend the application of a sequential approach in planning for retail development whereby development is located in the town centre where possible. The site could be considered as an out of centre site with limited accessibility from the existing commercial centre. The site is currently unserviced and there are no plans for it to be connected to the public sewer.

9.5.3 It is located directly adjacent to a tributary of the River Dinin (SAC) and 400m away from the River Barrow and River Nore SAC. Furthermore, the site is located in an area where the water quality is possibly at risk of not achieving 'good status' by 2015 in line with the Water Framework Directive (Figure 9.3).

9.5.4 The site is also located in an area of extreme aquifer vulnerability (Figure 9.4). Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Aquifers of extreme vulnerability and high vulnerability are the two classifications of aquifers which are most sensitive to an imposed contaminant load.

9.5.5 The EPA and Water Inspectorate both advise against development that is not connected to a mains sewer in areas of extreme vulnerability or sensitive protected areas, such as SACs. In addition, An Bord Pleanála precedents refused development in areas of high groundwater vulnerability.

9.5.6 A number of mature trees are located on the site and present a scenic entrance to the town from the Dublin Road.

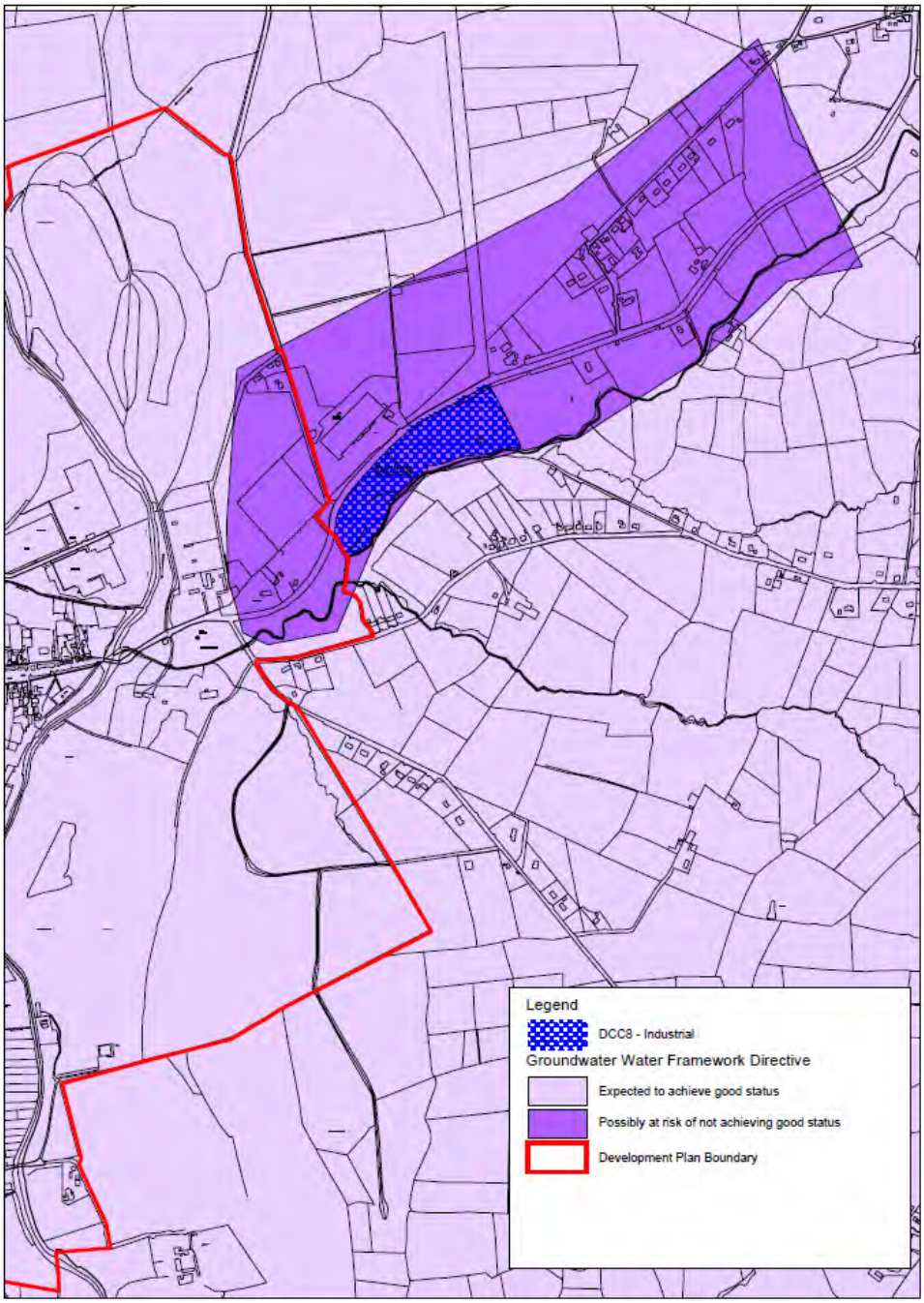

Figure 9.3: Groundwater Quality at Industrial Zoning to North East of Castlecomer (EPA, 2008)

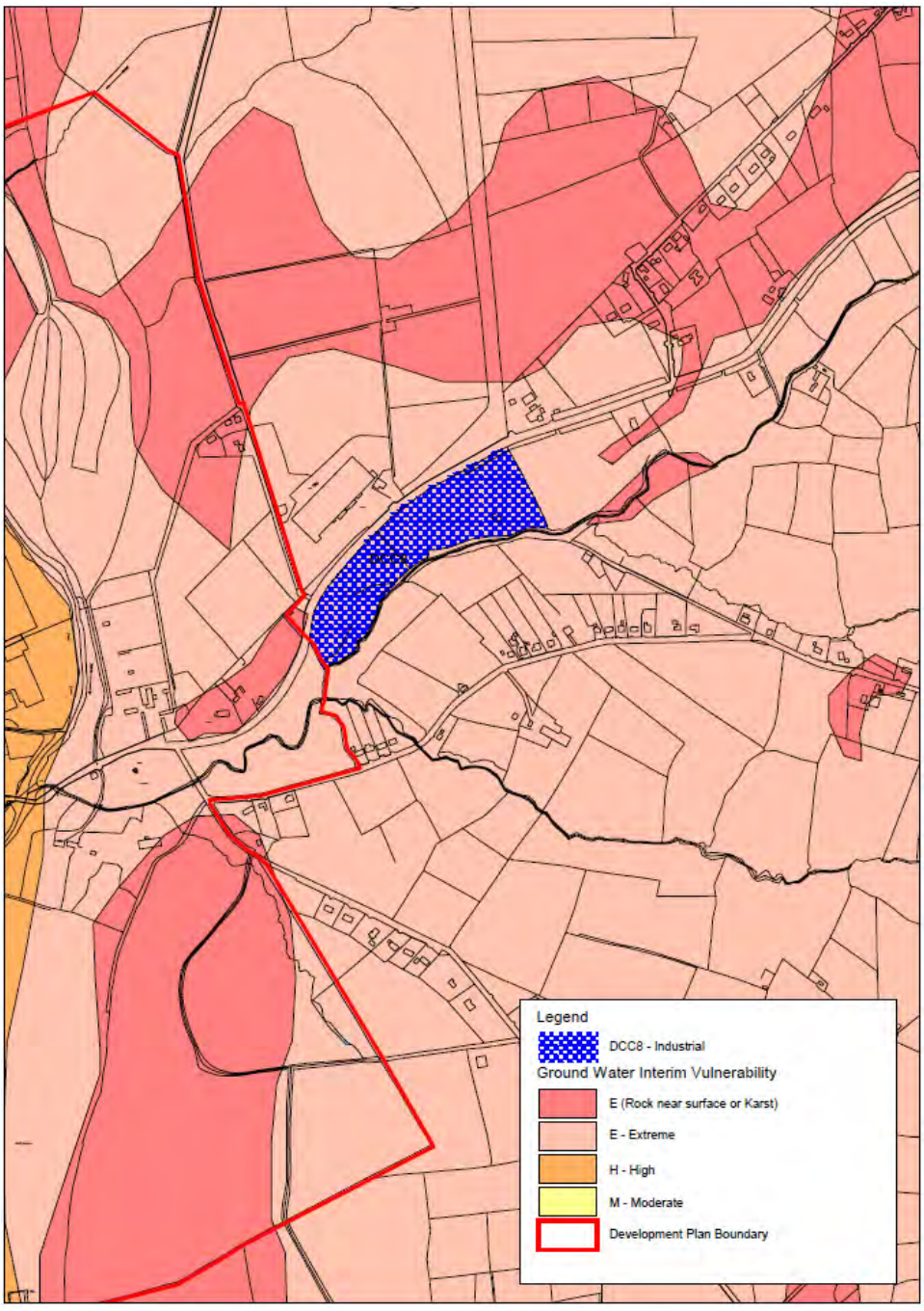

Figure 9.4: Aquifer Vulnerability at Industrial Zoning to North East of Castlecomer (GSI, 2008)

9.6 Assessment of Proposed Amendments

Table 9.2: Assessment of Proposed Amendments

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
R1: The 2007 Review of the County Retail Strategy identifies the need to enhance vitality and viability of the town and to achieve this through a substantial improvement in its retail floorspace to achieve designation as a Tier 2 Level 2 Sub County Town Centre in the County Retail Hierarchy. It is therefore the policy of this plan to: To deliver the objective of the County Retail Strategy and provide framework to ensure that the vitality and viability of Castlecomer is sustained and enhanced and retail needs are being met on an efficient, equitable and sustainable basis; Improve the retail offer by providing for retail floorspace uses in the mixed use lands on the zoning map which includes the IJM factory site to the north of the High street and the lands at the Glanbia premises; Ensure that new provision builds on opportunities provided by existing assets such as the Castlecomer Estate Yard; and maximise the opportunity for direct pedestrian links to the Square from significant redevelopment opportunities.										No material change to policy therefore no significant additional impacts.
R2: The centre of Castlecomer will be the focus of all major new retail development and the Council will normally permit proposal whereby the development:										No material change to policy therefore no significant additional impacts.

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Is consistent with the County Retail Strategy; Improves and enhances pedestrian movement in the town, contributing to access for all; Is well integrated with the existing centre by respecting the building line of the existing urban environment and providing for linked trips to the remainder of the centre and contributing towards improving the environmental quality; and Positively reflects the town's historic fabric and significant townscape value.										
R3: The County Retail Strategy sets out the role and function of Castlecomer within the retail hierarchy providing guidance on the distribution of new floorspace. The Retail Strategy defines Castlecomer as a Tier 2 Level 2 Sub County Town and recognises that the retail offer of the town needs to be improved substantially in order to meet its objectives to reach Tier 2, Level 2 status. The distribution of new floorspace should be linked to Castlecomer's role in the retail hierarchy for the County and should be appropriate in scale and character to the hierarchical role of the centre. The type of shopping that is appropriate to this level of the hierarchy includes middle convenience and comparison, particularly tourism related. It will not be appropriate to prescribe what the capacity potential for additional floorspace is in the town and in general it will be subject to the assessment criteria for retail developments being met where proposals are above the 500m² (gross) threshold set for both convenience and									No material change to policy therefore no significant additional impacts.

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
comparison floorspace.										
RES1: In line with the Development and settlement strategy, it is a specific objective of the Plan to consolidate settlement within the town boundary and provide a number of opportunity sites within this area for new housing development inclusive of the provision of low density residential development.									?	Low-density residential developments can be associated with inefficient, use of land. . However the Residential Density Guidelines 1999 recommend considering very limited areas of low density development where, in exceptional cases, particularly where there is a need to make and appropriate transition between higher density development and open countryside.
T2: It is the Council's intention to carry out a traffic management plan for the town and supporting signage strategy which provides for additional car parking provision particularly where this can be accommodated as part of backland development(Glanbia Site , IJM Site) close to shopping, amenity and other community services.									✓	Policy may improve air quality in the town centre if plan results in less congestion.
E3: In recognition of the opportunities for tourism development and associated employment creation, it is the objective of the Council to support expansion of tourism related facilities in the town. The Council would support the improvement of physical and commercial linkages between the town, the Demesne and other tourism facilities and the protection and enhancement of environmental quality in support of this.		✓								Implementation of policy may help to improve the pedestrian linkages within the town thus reducing the need to travel by private car (e.g. between the town centre and Demesne).
F1: In areas at risk from flooding, and locations subsequently identified through Flood Risk Assessment, a sequential and		✓	✓			✓				Policy amended to reflect changes to national policy with regard to flooding. (1) (2) (5) Stronger

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
hierarchical approach to avoidance, substitution and mitigation of development in flood risk areas will apply. For areas at risk of flooding and identified as benefitting lands development will not generally be permitted on areas identified as benefitting lands and uses adjacent to this areas will be constrained.										policies should reduce the risk of adverse effects to material assets, human health and reduce the risk to the effects of climate change...
F2: In exceptional circumstances taking into account the Justification Test set out in the Planning Guidelines "The Planning system and flood risk management" will be applied to development proposals, appropriately designed development, which is not sensitive to the effects of flooding may be permissible in areas at risk of flooding provided it does not reduce the flood plain area or otherwise restrict flow across floodplains.		✓	✓			✓				Policy amended to reflect changes to national policy with regard to flooding. (1) (2) (5) Stronger policies should reduce the risk of adverse effects to material assets, human health and reduce the risk to the effects of climate change.
F3: The Council will support the introduction of attenuation measures that would reduce levels of surface water discharge into the main water course, thereby reducing the risk of flooding and ensure that final concentrations of pollutants will not result in a deterioration of water quality. To do this, the Council will encourage surface water management for all green-field developments, whereby surface water run-off will be limited to pre-development levels. In the case of brown-field development, while existing surface water drainage measures will be taken into account, some attenuation measures for surface water may be required at the		✓	✓			✓				Policy amended to reflect changes to national policy with regard to flooding. (2) (3) (6) - Stronger policies should reduce the risk of adverse effects to material assets, human health and reduce the risk to the effects of climate change

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
discretion of the planning authority in the interests of balanced and sustainable development. In line with the above Kilkenny County Council will consider all drainage proposals consistent with SuDS (Sustainable Drainage Systems). In the design of surface water systems, regard shall be had to the Greater Dublin Regional Code of Practice for Drainage Works and associated GDSDS technical documents.										
IN2: It is an objective of the Council to upgrade the existing waste water treatment facility for Castlecomer to enable development as proposed in this Local Area Plan and ensure that improvements are sufficient to meet standards required to avoid significant adverse effects on the River Nore and River Barrow SAC.		✓	✓			✓				Policy has been amended to ensure that the Waste Water Treatment Plant is upgraded in accordance with mitigation measures required by the Appropriate Assessment. (2) (3) (6) This policy strengthens the protection of water quality and biodiversity.
OS 1: New development should enhance quality of and access to existing open space and where necessary create areas of new open space. This will be achieved by: ▪ Creating new linkages between the town and the Castlecomer Demesne and ensuring that opportunities for riverside access are created and maintained; ▪ Where for smaller developments, financial contributions are deemed appropriate, improving the quality of existing Class II spaces; ▪ Extending the hierarchy of public open spaces within the plan and at a minimum require the provision of Class II /		✓								Policy wording changed to provide linear park instead of buffer alongside the Dinin River. Policy wording changed to include reference to quality of open space and provision of recreation facilities – positive impact on SEA Objective 3 in relation to human health and socio-economic impacts.

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
neighbourhood park within the Ballyhimmin Residential Development Area, and provide for a linear park, where appropriate, alongside the Dinin River part of the River Barrow and River Nore SAC; ▪ The provision of Class III Informal/ Casual open space in all areas. These areas will be landscaped and provide an informal amenity for the surrounding neighbourhood areas; ▪ Address the quantitative deficiency in open space that is likely to result in the long term; ▪ Improving the quality of existing open spaces by supporting the provision of recreational facilities and improving the active use of open space; ▪ Meeting design principles set out in the County Development plan and specifically designing for active frontages and natural surveillance.										
NH1: In seeking to protect and enhance the natural environment, the Council will refer to relevant policies and objectives set out in the County Development Plan and seek; ▪ To protect natural heritage sites designated in National and European legislation, specifically the River Dinin part of the Rivers Nore and River Barrow SAC (See NH2); ▪ To protect and incorporate existing biodiversity features such as hedgerows and surface water features into the design and construction of new development and public realm; ▪ To enhance the biodiversity value of existing open	✓		✓	✓						Policy makes further requirements in relation to designated and non-designated sites. This policy has been amended to ensure that the impacts on the River Nore and River Barrow SAC are avoided and mitigated as set out in the Castlecomer Local Area Plan Appropriate Assessment. This policy strengthens the protection of water quality and biodiversity. (1)

Proposed Amendments – Policies	SEA Objective									Comments Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	
spaces; and ▪ The assessment of biodiversity levels, outside designated sites where deemed appropriate ▪ The boundary of the SAC as given by NPWS should be strictly respected at all times. In Castlecomer, the site boundary encompasses margins of riparian vegetation and this should be fenced off and maintained during any adjacent construction works. ▪ Development within the town that is within or adjacent to the SAC should be screened for impacts in accordance with the requirements for Appropriate Assessment under the Habitats Directive. An appropriate assessment at project stage will determine the value of features and land parcels within the SAC.										
NH2: The River Dinin has considerable potential both waterside and landside to be used as recreational asset for the town and the Local Area Plan will seek to promote the natural amenity potential of this site subject to: ▪ Relevant policies and objectives set out in the County Development Plan: ▪ The protection of this site in accordance with National and European legislation ensuring that any development in or near the SAC will avoid any significant adverse impact on the features for which the site has been designated; ▪ Consultation with the prescribed bodies and relevant government agencies when assessing developments which are likely to impact on designated natural heritage										Policy amended to have regard to relevant policies and objectives in the County Development Plan – no significant impacts.

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
sites or those sites proposed to be designated; ▪ The completion of an appropriate environmental assessment in respect of any proposed development likely to have an impact on a designated natural heritage site, or those sites proposed to be designated.										
AC1: Kilkenny County Council considers that the historic core of Castlecomer town comprises an area of special architectural, archaeological, historic interest, presents an attractive townscape and is worthy of protection as an Architectural Conservation Area. Figure 5.2 illustrates the general location and boundary of the proposed Architectural Conservation Area							✓	✓		This policy has been added as a proposed amendment and constitutes a material change to the plan. (7) (8) It is likely to result in improved protection of the historic landscape and in particular protected structures.
ARC1: It is the policy of the Council to support the protection of archaeological heritage through preservation in situ of, or preservation by record of recorded Monuments and any other archaeological features in Castlecomer.							✓	✓		This policy has been added as a proposed amendment and constitutes a material change to the plan. (7) (8) It is likely to result in improved protection of the historic landscape and in particular protected structures.
ARC2: It is the policy of the Council to control development in the vicinity of a recorded feature where it could potentially detract from the setting or the cultural or educational value of the feature. Developers will be required to submit an archaeological							✓			This policy has been added as a proposed amendment and constitutes a material change to the plan. (7) (8) It is likely to result in improved protection of the historic landscape and in particular protected

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
assessment of the proposed development where the site includes a monument or site included in the Record of Monuments and Places. The purpose of the archaeological assessment will be to establish the extent of archaeological material associated with the monument or site and define a buffer area which will result in the preservation of the setting and visual amenity of the site.' Where applications for development, include proposals to remove remnants of the railway line, consultation with the Council's Heritage and Conservation Officers will be undertaken. Where practical, these remnants should be maintained in order to preserve Castlecomer's historic landscape and enhance permeability within the town.										structures.
RPS1: In order to protect and preserve buildings, features and sites of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest as highlighted in Appendix 1 of this plan, the County Council will require: ▪ an architectural heritage assessment/architectural impact assessment report to be submitted with all application relation to Protected Structures This should be prepared in accordance with Appendix B of the "Architectural Heritage Protection, Guidelines for Planning Authorities".							✓			New policy seeks to protect cultural heritage.
RPS2: To encourage and apply flexibility in order secure the appropriate reuse, renovation and rehabilitation of a Protected Structure							✓			New policy could have positive impacts by encouraging the conservation of Protected Structures.

Proposed Amendments – Policies	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
CF2: It is a specific objective of the Plan to allow for the development of a new primary Health Care facility which will be provided by the Health Service Executive over the plan period which may be incorporated on the Riverside mixed use opportunity site. The development of this primary care facility should seek to a deliver high quality environment.										Criteria in relation to design of facility deleted from policy – no significant impacts envisaged.

Table 9.3: Proposed Amendments – Land Use Zoning Objectives and Site Development Briefs

Amended Land Use zoning Objectives and Site Development Briefs	SEA Objective									Comments
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
Change Residential zoning Residential: Permitted Uses: Dwellings, open spaces, places of worship, community facilities, halting sites, public service installations, childcare facility, nursing homes, Bed and breakfast establishments and guesthouses, home-										No material change to policy therefore no significant additional effects.

	SEA Objective									
based economic activity, parks and open spaces, playing fields, local convenience shop, nursing homes, and medical centre.										
New Zoning Category **Low Density Residential** **Objective** *To provide for low density residential development appropriate to the scale and character of Castlecomer* **Permissible Uses** Dwellings, open spaces **Open for Consideration** Places of worship, community centres, halting sites, public service installations, playgroup or crèche, nursing homes, bed and breakfast establishments and guesthouses, lock up garages, local convenience shop, hotel, public house, restaurant, use by owner or occupier of part of a private residence as a studio, for a light industrial activity, a clinic or surgery, professional office, or as a playgroup or crèche. **Not permissible** Advertising Board, Amusement, ATM, Bank, Betting Office, Building										Refer to comments set out in the evaluation of the likely significant effects of RES 1.

	SEA Objective									
Society, Café, Car Park, Caravan Park/Campsite, Casual Trading, Car Repair/Sales, Cemetery, Enterprise Centre/Campus, Funeral Home, Garden Centre, Golf Course, Hairdressing/Beauty Salon, Industry (General Industrial Use), Industry (Light), Industry with workshop/showroom, Night-club, Office, Public House, Service/Petrol Station Shop (Comparison), Shopping Centre, Take-away, Retail Warehousing, Wholesale/Warehousing.										
New Zoning Category Amenity / Open Space / Green Links / Biodiversity Conservation **Objective** To allow for amenity / open space / green links / biodiversity conservation purposes and to allow for the expansion of tourist related facilities in the Discovery Park. **Permitted Uses** Open space, playgrounds and facilities associated with active recreational uses	✓	✓				✓		- ?	- ?	New zoning category included which will improve environmental objectives (1) (2) (6) However, tourism development may have negative effect on landscape in the Castlecomer Demesne.

	SEA Objective									
and tourism related facilities in the Discovery Park. Open for Consider **Not permitted** Uses that may affect the integrity of the River Nore and River Barrow SAC designation which extends to include the Kings River.										
Area 1: Riverside Quarter mandatory objectives • *The redevelopment of the site must accommodate public car parking* • *Realising the full development potential of this site depends on the provision of pedestrian linkages to the Castlecomer Demesne)* • *A continuous walking and cycling route must be developed along the riverside frontage* • *A publicly accessible riverside space must be provided* • *Improvements to the retail offer in the town*	?	✓							✓	Proposals for this site provide for the efficient use of land in close proximity to the town centre with associated benefits for accessibility and re use of previously developed land. The mandatory objective that seeks the provision of pedestrian linkages to the Castlecomer Demesne should be considered at project level for any potential implications on the River Nore and River Barrow SAC. A project level appropriate assessment should therefore be required.
Ardra Quarter ***mandatory objectives*** • *The provision of access points and pedestrian routes that allow access through the site and provide for direct*								✓		

	SEA Objective									
access to the centre of the town; • *Incorporate existing access features such as trees and hedgerows;* • *Incorporate high quality landscaping and screening maintaining where possible the open nature of the landscape* • *Ensure that the development accommodates a variety of high quality residential units.* • *High quality viewing opportunities of the town and Discovery Park across the site*										
Barrack and Parish Lands ***mandatory objectives*** *• To realise the potential of this site to improve permeability in the town* *• To have regard to the barracks as a structure included on the Record of Protected Structures*. *Investigate the status of the Barracks on the RPS prior to any development being permitted;* *• Range of house types and tenure* *• If appropriate, housing design should seek to meet user needs and should refer to good practice in housing design for older people e.g. Older Persons Housing Design: A European Good Practice Guide*										No significant effects

	SEA Objective									
(October 2007)[2]										
Glanbia Site ***mandatory objectives*** *To incorporate pedestrian routes that allow for direct access routes to the main shopping area and improve permeability generally* *Ensure that the development proposal takes account of existing historic structures including the Castlecomer Co – Operative Creamery which has been recorded by the National Inventory of Architectural Heritage as having regional significance)* *• The redevelopment of the site must accommodate public car parking*										No significant effects
Kilkenny Road Employment Area ***mandatory objectives*** *To retain the existing natural features on the site:* *Provide access via the Kilkenny Road:* *Provide a road link to adjacent residential area – site development brief 6* *High quality and accessible environment; and* *Efficient use of land and buildings whilst minimising visual impact on the surrounding*										No significant effects

	SEA Objective									
landscape.										
Ballyhimmin ***mandatory objectives*** *Retention of existing natural features of the site;* *Improved assess and permeability within the site and to the surrounding area;* *High quality and accessible residential environment with associated amenity community neighbourhood retail facilities to include public open space:* *Provide for a road connection to area 5.*										No significant effects
Athy Road ***Introduction and Context*** *This site is located on the north eastern outskirts of Castlecomer and bounded to the east by the Athy Road (N78) and Ormonde Brick. A tributary of the River Dinin (SAC) runs to the west of the site and the site is bounded to the north by a greenfield site and to the south by woodland. It is currently greenfield with a number of mature trees bordering the site. The site is approximately 5.3 ha and has been zoned for industrial use.* ***Development Influences*** *Key constraints to be addressed in any development proposals include:*										The location of this site could be considered out of centre site with limited accessibility from the town with particular constraints stemming from the Bridge. A number of mature trees are located on the site and present a scenic entrance to the town from the Dublin Road. It is located directly adjacent to a tributary of the River Dinin (SAC) and 400m away from the River Barrow and River Nore SAC. Furthermore, the site is located in an area where the water quality is possibly at risk of not achieving 'good status' by 2015 in line with the Water Framework Directive.

	SEA Objective									
The proximity of the River Barrow and River Nore SAC to the site (400m) and the River Dinin tributary bordering the eastern side of the site; *The site is located in an area of extreme aquifer vulnerability;* *The site is currently unserviced;* *Visual impact of development at a gateway of the town;* *The presence of mature trees bordering the site;* *Road safety issues due to location of site on fast approach into Castlecomer and poor visibility along this stretch of road;* *The difficult of accessing the site on foot from the town.* ***Mandatory Objectives*** *Appropriate Assessment to be carried out for potential impacts of the development on the River Dinin tributary, to:* *assess extent and ensure protection of riparian vegetation along site boundary;* *assess potential impacts on water quality, with particular consideration given to the high groundwater vulnerability on the site;* *ensure protection of mature trees on the site.*										The site is currently unserviced and there are no plans for it to be connected to the public sewer. The site is also located in an area of extreme aquifer vulnerability. Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Aquifers of extreme vulnerability and high vulnerability are the two classifications of aquifers which are most sensitive to an imposed contaminant load. Whilst environmental effects of development will be mitigated through incorporation of a number of detailed environmental criteria set out in the site development brief, it is of particular importance that development provides for the connection to the mains waste water treatment in order to mitigate groundwater contamination.

	SEA Objective									
Consideration of traffic impact and road safety; a road safety audit and traffic impact assessment may be required; *retention of mature trees;* *Minimise visual impact which should be determined through a visual impact assessment;* *Incorporate pedestrian routes from the town centre to the site* *Proposals for development should consider connection to the mains waste water* *treatment in order to mitigate extreme groundwater vulnerability.* ***Development Principles*** ***Land Use*** *The Athy Road site has been identified as an area for industrial development.* ***Transport & Access*** *The site is located on the Athy Road (N78) and any development will have to take account of traffic impact and road safety issues. As the site is currently undeveloped there is limited access to the site.* ***Urban Design*** *The urban design strategy for the site should be based on mitigating environmental impacts through appropriate design and minimising traffic*										

	SEA Objective									
impact and associated risks.										

9.7 Summary of Potential Adverse Effects

- Use of greenfield site with potential impacts on natural features such as hedges and trees, soil quality through surface water run off
- Increase hard standing resulting in additional volume of surface water run off
- Visual impact
- Overall increase in traffic generation from development at out of centre locations and associated implications for air quality
- Increase volume of vehicle traffic arising from development on the Athy Road
- Potential adverse effect on groundwater quality
- Possible negative effects on landscape in the Castlecomer Demesne.

9.8 Cumulative Effects

9.8.1 Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the LAP (e.g. noise, dust and visual) have a combined effect.

9.8.2 Examples of cumulative, secondary and synergistic effects include loss of tranquillity, changes in the landscape, economic decline and climate change. These effects are very hard to deal with on a project-by-project basis through Environmental Impact Assessment. It is therefore at the SEA level that they are most effectively identified and addressed.

9.8.3 Assessment of cumulative effects should:

- Focus on identifying the total effect of both direct and indirect effects on receptors. Receptors may include natural resources (e.g. air, water, soil), sections of the population (e.g. people living in particular areas or vulnerable members of the community) or ecosystems and species (e.g. heathland);
- be considered in relation to the nature and extent of the receptors, such as ecosystems and communities, rather than administrative boundaries;
- be considered in relation to effects of policies within a plan and those which may result from interaction with the effects of other plans and programmes; and
- Take account of how close the plan, in association with other past, present and likely future actions, will bring the receptors to their capacity/threshold to remain productive or sustainable.

9.8.4 **Table 9.5** sets out an assessment of cumulative impacts by using a shading system to provide a visual representation of where cumulative impacts may occur. By using such an approach, it is possible to see where impacts which alone may appear to be insignificant, have a cumulatively significant impact.

9.8.5 **Table 9.4** indicates levels of impacts and associated shading used to assess cumulative impacts in **Table 9.5**.

Table 9.9.4: Significance of Impacts

	Impact
	No impact
	Possible negative impact
	Possible significant negative impact

Table 9.5: Assessment of Cumulative Impacts – Proposed Amendments	1 BIODIVERSITY	2 POPULATION & HUMAN HEALTH	3 GROUNDWATER	4 RIVER WATER QUALITY	5 WATER QUALITY AND SUPPLY	6 CLIMATIC FACTORS	7 CULTURAL HERITAGE	8 LANDSCAPE	9 SOIL & AIR
R1									
R2									
R3									
RES1									
T2									
E3									
F1									
F2									
F3									
IN2									
OS 1									
NH1									
NH2									
AC1									

ARC1									
ARC2									
RPS1									
RPS2									
CF2									
Change Residential zoning									
New Zoning Category Amenity / Open Space / Green Links / Biodiversity Conservation									
Area 1: Riverside Quarter									
Ardra Quarter Barrack and Parish Lands									
Glanbia Site									
Kilkenny Road									
Ballyhimmin									

Athy Road									

9.9 Summary of Cumulative Impacts

9.9.1 **Table 9.6** illustrates where cumulative impacts of the Proposed Amendments through the use of shading, the darker the shading indicates the more significant the individual impact may be

9.9.2 It is evident from the table that possible negative cumulative impacts may occur on the following environmental receptors:

- Population and Human Health
- Climatic Factors
- Soil and air quality
- Landscape

9.9.3 **Table 9.6** demonstrates that negative cumulative impacts may occur with regard to human health due to existing levels of public transport and the likely development of greenfield land at inaccessible locations. Car use and dependence may increase in conjunction with greenhouse gas emissions localised issues in relation to air quality.

9.9.4 Cumulatively, greenfield development will also result in loss of soil, visual impact, and increased surface water run off.

10. Mitigation Measures

10.1 Draft Plan Mitigation Measures

10.1.1 Mitigation measures can be described as measures to avoid, reduce or offset significant adverse effects on the environment. The Environmental Report is required to describe any measures envisaged to prevent reduce and as fully as possible offset any significant adverse environmental effects of implementing the plan.

Summary of Mitigation Measures Proposed

10.1.2 **Table 8.2** which appraises the policies in the Plan also sets out a number of suggested mitigation measures. Mitigation measures proposed include:

Biodiversity, Fauna and Flora

- Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin.
- Require the preservation of hedgerows within new development
- Avoid development on and establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions established through appropriate assessment.

Material Assets

- Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area
- Development on the floodplain should be restricted

Cultural Heritage

- Where development takes place in areas of archaeological potential ensure that ensure all necessary measures are taken to preserve items in situe
- Include policies to ensure that new development has a minimal impact on Protected Structure, National Monuments, structures on the National Inventory of Architectural Heritage
- Development in or close to the high street and particularly for buildings that may be visually prominent should require visual impact assessments.
- Incorporate design measures to reduce street clutter into road improvement schemes

Landscape

- In visually sensitive areas new development should use visual screening and planting
- Reduce light pollution through appropriate design measures e.g. using full cut off lighting
- Development in upland areas or areas with sensitive landscapes to be subject to an assessment of the potential visual impacts of the proposed development.
- Restrict residential development on the floodplain.

- New pedestrian/cycle bridge infrastructure should consider the need for project level AA and avoid impacts on designated biodiversity sites.

Water and Soil

- Ensure that adequate capacity in the waste water treatment plant is available to serve all new development
- Ensure that adequate capacity in water supply is available to serve new development
- Focus development where possible initially on brownfield land
- To encourage the reuse soils generated from housing and other development

Population and Human Health

- The plan identify measures to support sustainable forms of transport;
- The plan should actively encourage the take up of Travel Plans for new educational and employment sites;
- The plan should seek to improve accessibility to employment, education, healthcare, food retailing and to a range of housing types and community and recreation facilities.

Air

- Speed restrictions in the town centre could have a beneficial effects in certain locations as slower speeds conserve fuel and increase fuel efficiency, thereby minimising emissions

Climatic Factors

- Mitigating this increase in greenhouse gas emissions by promoting sustainable travel modes than private car should also be promoted
- Encourage use of sustainable design and construction methods

10.2 Recommendations taken forward

10.2.1 A number of policies have been included in the Draft and Proposed Amendments address environmental issues identified through the Strategic Environmental Assessment Process. **Table 10.1** sets out how mitigation measures proposed have been incorporated into Proposed Amendments.

Table 10.10.1: Plan Policy Response to SEA Findings

Mitigation Measure	Incorporation of Mitigation measures and assessment results
Biodiversity, Fauna and Flora	
Incorporate a riverside buffer zone that limits development in close proximity to the River Dinin.	NH1, NH2
Require the preservation of hedgerows within new development	NH1, NH2,
Avoid development on and establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions established through appropriate assessment.	NH1, NH2,
Material Assets	
Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area	ARC1 / ARC 2
Development on the floodplain should be restricted	F1 / F2
Cultural Heritage	
Where development takes place in areas of archaeological potential ensure that ensure all necessary measures are taken to preserve items in situe	ARC 1 / ARC 2
Include policies to ensure that new development has a minimal impact on Protected Structure, National Monuments, structures on the National Inventory of Architectural Heritage	TC1 / AC1 / AC2,
Landscape	
In visually sensitive areas new development should use visual screening and planting	Urban Design requirements set out in the Draft Plan / Site Development Briefs
Development in upland areas or areas with sensitive landscapes to be subject to an assessment of the potential visual	Site Development Briefs

Mitigation Measure	Incorporation of Mitigation measures and assessment results
impacts of the proposed development.	
Restrict residential development on the floodplain.	F1 / F2
New pedestrian/cycle bridge infrastructure should consider the need for project level AA and avoid impacts on designated biodiversity sites.	NH2
Water and Soil	
Ensure that adequate capacity in the waste water treatment plant is available to serve all new development	IN2
Ensure that adequate capacity in water supply is available to serve new development	IN1
Focus development where possible initially on brownfield land	TC1 / Plan Vision and Objectives
To encourage the reuse soils generated from housing and other development	N/a
Population and Human Health	
The plan identify measures to support sustainable forms of transport;	R1 / R2 / RES3 / T1 / T2
The plan should actively encourage the take up of Travel Plans for new educational and employment sites;	Public transport not within the remit of the Plan
The plan should seek to improve accessibility to employment, education, healthcare, food retailing and to a range of housing types and community and recreation facilities.	R1 / RES3 / T1 / T2
Air	

Mitigation Measure	Incorporation of Mitigation measures and assessment results
Speed restrictions in the town centre could have a beneficial effects in certain locations as slower speeds conserve fuel and increase fuel efficiency, thereby minimising emissions	T1 / T2
Climatic Factors	
Mitigating this increase in greenhouse gas emissions by promoting sustainable travel modes than private car should also be promoted	R1 / R2 / RES3 / T2
Encourage use of sustainable design and construction methods	RES2

11. Monitoring Proposals

Introduction

11.1.2 Article 10 of the SEA Directive requires significant environmental effects of the implementation of plans to be monitored in order to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action.

11.1.3 In order to avoid additional and continued work where unnecessary, it is recommended that monitoring proposals mirror, where possible, those outlined in the SEA for the Kilkenny County Development Plan 2008 – 2014.

11.1.4 Proposed monitoring measures have been based on indicators which measure changes in the environment. These indicators include:

- Loss of habitats and species (CDP)
- Deprivation Index
- Faecal Coliform counts per 100ml of groundwater (CDP)
- New developments granted permission which cannot be adequately served by the current wastewater treatment plant (CDP)
- Biotic Quality Rating (Q value) (CDP)
- Levels of E-Coli present in drinking water
- Developments granted permission which cannot be adequately service by current water supply
- Developments granted permission on flood plain / unauthorised development on floodplain
- Recorded flooding episodes
- Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP)
- Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)
- Area of brownfield land available (CDP)

Environmental Objective	Indicator	SEA Topic Areas
Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development	Loss of habitats and species (CDP)	Biodiversity, flora and fauna
Improve the socio-economic profile of Castlecomer	Deprivation index	Population and Human Health
Prevent pollution and contamination of groundwater	Faecal Coliform counts per 100ml of groundwater (CDP) New developments granted permission which cannot be adequately served by the current wastewater treatment plant	Water
Protect and improve river water quality in Castlecomer	Biotic Quality Rating (Q value) (CDP)	Water
Protect and improve water supply	Levels of E-Coli present in drinking water Developments granted permission which cannot be adequately service by current water supply	Water and Human Health
Reduce vulnerability to effects of climate change, including flood risk	Developments granted permission on flood plain / unauthorised development on floodplain Recorded flooding episodes	Climatic factors / Material Assets
Protect and conserve Castlecomer's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows	Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP)	Cultural Heritage
Protect and enhance valued natural and historic landscapes and features within them, including scenic views	Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)	Landscape
Protect and enhance soil and/or air quality.	Area of brownfield land available	Soil, Air, Human Health

Appendix 1: SAC Site Synopsis

Site Synopsis RIVER BARROW AND RIVER NORE (SITE CODE: 002162)

This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford.

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

Good examples of Alluvial Forest are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Crack Willow (*S. fragilis*), Osier (*S.viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*). Three rare invertebrates have been recorded in this habitat at Murphy's of the River. These are: *Neoascia obliqua* (Diptera: Syrphidae), *Tetanocera freyi* (Diptera: Sciomyzidae) and *Dictya umbrarum* (Diptera: Sciomyzidae). A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the EU Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Cratoneuron commutatum* var. *commutatum* and *Eucladium verticillatum*, have been recorded. The best examples of old Oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the sixteenth century and has the most complete written record

of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss *Leucodon sciuroides.* It has a typical bird fauna including Jay, Long-eared Owl and Raven. A rare invertebrate, *Mitostoma chrysomelas,* occurs in Abbeyleix and only two other sites in the country. Two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The rare Myxomycete fungus, *Licea minima* has been recorded from woodland at Abbeyleix. Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by Oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*).

All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*) Wood Rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*) On the steeply sloping banks of the River Nore about 5 km west of New Ross, in County Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of a relatively undisturbed, relict Oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown a small, mature Oak-dominant woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard Fern (*Blechnum spicant*), Cowwheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*). Borris Demesne contains a very good example of a semi-natural broad-leaved woodland in very good condition. There is quite a high degree of natural re-generation of Oak and Ash through the woodland. At the northern end of the estate Oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly Oak species. The woods have a well established understorey of Holly (*Ilex aquifolium*), and the herb layer is varied, with Brambles abundant. Whitebeam (*Sorbus devoniensis*) has also been recorded.

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places. Floating River Vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include Water Starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), Milfoil (*Myriophyllum* spp.), *Potamogeton* x *nitens,* Broad-leaved Pondweed (*P. natans*), Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and Crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996).

Dry Heath at the site occurs in pockets along the steep valley sides of the ivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken (*Pteridium aquilinum*) and Gorse (*Ulex europaeus*) species with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (*Galium saxatile*), Foxglove (*Digitalis purpurea*), Common Sorrel (*Rumex acetosa*) and Bent Grass (*Agrostis stolonifera*). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (*Orobanche rapum-genistae*) has been recorded. Where rocky outcrops are shown on the maps Bilberry (*Vaccinium myrtillus*) and Wood Rush (*Luzula sylvatica*) are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of Clover species including the legally protected Clustered Clover (*Trifolium glomeratum*) – a species known from only one other site in

Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (*Sedum anglicum*), Sheep's-bit (*Jasione montana*) and Wild Madder (*Rubia peregrina*). These rocks also support good lichen and moss assemblages with *Ramalina subfarinacea* and *Hedwigia ciliata*. Dry Heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabrisky, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*), Tormentil (*Potentilla erecta*), Carnation Sedge (*Carex panicea*) and Bell Heather (*Erica cinerea*).

Saltmeadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) (Flora Protection Order, 1987) are found. The very rare Divided Sedge (*Carex divisa*) is also found. Sea Rush (*Juncus maritimus*) is also present. Other plants recorded and associated with salt meadows include Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*), Sea Arrowgrass (*Triglochin maritima*) and Sea Plantain (*Plantago maritima*).

Salicornia and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones. The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include *Arenicola marina*, *Nephtys hombergii*, *Scoloplos armiger*, *Lanice conchilega* and *Cerastoderma edule*.

The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (*Carex* spp.), Meadowsweet, Willowherb (*Epilobium* spp.) and rushes (*Juncus* spp.). Wet woodland also occurs. This area supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.

The dunes which fringe the strand at Duncannon are dominated by Marram grass (*Ammophila arenaria*) towards the sea. Other species present include Wild Sage (*Salvia verbenaca*), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift (*Armeria maritima*), RockSamphire (*Crithmum maritimum*) and Buck's-horn Plantain (*Plantago coronopus*). Other habitats which occur throughout the site include wet grassland, marsh, reed swamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds.

Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge (*Carex divisa*), Clustered Clover (*Trifolium glomeratum*), Basil Thyme (*Acinos arvensis*), Hemp nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh Grass (*Puccinellia fasiculata*), Meadow Barley (*Hordeum secalinum*), Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Wild Sage (*Salvia verbenaca*), Nettle-leaved Bellflower (*Campanula trachelium*), Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Broomrape (*Orobanche hederae*) and Greater Broomrape (*Orobanche rapum-genistae*). Of these the first nine are protected under the Flora Protection Order 1999. Divided Sedge (*Carex divisa*) was thought to be extinct but has been found in a few locations in the site since 1990.

In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and Summer Snowflake (*Leucojum aestivum*). Six rare lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria.* The rare moss *Leucodon sciuroides* also occurs. The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*), the marsh snail *Vertigo moulinsiana* and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel *M. m. durrovensis* and one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentoni*), Badger (*Meles meles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*). The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater Mussel species, *Anodonta anatina* and *A. cygnea*.

The site is of ornithological importance for a number of E.U. Birds Directive Annex I species including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bartailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country.

Landuse at the site consists mainly of agricultural activities – many intensive, principally grazing and silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs.

Fishing is a main tourist attraction along stretches of the main rivers and their tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits

throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present.

Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein. Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Pearl Mussel which is limited to a 10 km stretch of the Nore, add further interest to this site. (16.1.2003)

Appendix 2: Effluent Quality from WWT

Effluent Quality from Wastewater Treatment Plants

'Urban Waste Water Discharges in Ireland' 2004 to 2005 provides an analysis of the treatment of waste water for all agglomerations with a population equivalent over 500 during 2004 and 2005 and the quality of discharges from waste water treatment plants.

If column three for each parameter in county tables below show a value (shaded green) greater than zero, the plant has not complied with the requirements of the Regulations. In addition to the above, if a local authority fails to take the minimum number of samples specified in the Regulations then the treated discharge has failed to meet the requirements and as such is non-compliant. In this case the relevant parameter for each plant is marked in purple.

A colour code (light green) is used to mark the number of samples failing to meet the effluent quality standards at each individual plant. If column three for each parameter in the county tables shows a value (shaded green) greater than zero, the plant has not complied with the requirements of the Regulations.

2004

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gowran	4	4	4	4	3	2	4	4	1
Urlingford	2	1	1	2	1	0	2	2	1
Freshford	1	1	1	1	1	0	1	1	1
Paulstown	5	4	1	5	1	0	5	1	0
Stonyford [14]	1	1	1	1	1	0	1	1	0
From 1,001 to 1,999 PE									
Piltown	4	2	1	4	0	0	4	0	0
Ballyragget	1	1	1	1	1	1	1	1	1
From 2,000 to 10,000 PE									
Clogh-Moneenroe	4	1	0	4	0	0	4	1	1
Callan	4	3	3	4	1	1	4	2	1
Thomastown	3	0	0	3	0	0	3	0	0
Castlecomer	5	5	5	5	3	2	4	1	1
Graignamanagh	1	0	0	1	0	0	1	0	0
From 50,001 to 150,000 PE									
Kilkenny (Purcellsinch)	177	26	11	177	8	1	161	14	6

2005

Name and Population Equivalent	BOD			COD			TSS		
	No. Of Samples	No. of samples >25 mg/l	No. of samples >50 mg/l	No. Of Samples	No. of samples >125 mg/l	No. of samples >250 mg/l	No. Of Samples	No. of samples >35 mg/l	No. of samples >87.5 mg/l
From 500 to 1,000 PE									
Gowran	3	3	3	3	2	2	3	2	1
Freshford	1	1	1	1	1	1	1	1	1
Paulstown	2	2	1	2	1	0	2	0	0
Stonyford	1	1	1	1	1	0	1	1	0
Urlingford	10	5	1	10	3	0	10	4	2
From 1,001 to 1,999 PE									
Piltown	4	2	0	4	0	0	4	1	0
Ballyragget	3	1	0	3	0	0	3	1	0
From 2,000 to 10,000 PE									
Castlecomer	4	4	3	4	2	0	4	0	0
Clogh-Moneenroe	3	0	0	3	0	0	3	1	0
Thomastown	11	6	2	9	0	0	10	3	1
Graignamanagh	6	1	1	6	0	0	5	1	0
Callan	2	2	2	2	2	1	2	2	2
From 50,001 to 150,000 PE									
Kilkenny (Purcellsinch)	6	0	0	217	7	5	223	8	6

Appendix 3: Comparing Alternatives Matrix

Table 11.1: Comparing Alternatives Matrix

SEA Objective	Scenario			Comment
	1	2	3	
1. Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development.	-1	-1	-1	(1) would see the continued greenfield development in line with map 1 which would replace natural and semi-natural habitats with artificial surfaces and allow development close to designated sites. (2) would allow greenfield development in line with map 2 which would replace natural and semi-natural habitats with artificial surfaces and would allow for residential development close to or within the SAC. It is likely that the quantum of this development is greater than (2). (3) would see continued greenfield development which would replace natural and semi-natural habitats with artificial surfaces.
2. Improve population health and the socio-economic profile	-1	-1	1	(1) would keep the same quantum of industrial and general business zoned land as is currently provided. (2) would result in some increase in industrial and general business land at edge of centre locations, which may improve employment opportunities at relatively inaccessible locations (3) It would seek a moderate increase in industrial and mixed use zoning, potentially enhancing employment opportunities in the town. Increases in open space zoning should encourage physical activity and lead to health improvements.
3. Prevent pollution and contamination of groundwater.	?	-1	-1	(1) would depend on the upgrading of the wastewater treatment plant in Castlecomer. (2) would depend on the upgrading of the wastewater treatment plant in Castlecomer, but overall is likely to have significant negative effects resulting from further development outside the boundary in the area beyond the Castlecomer Demesne. This is primarily due to the fact that there is no waste water treatment infrastructure at this location which may increase vulnerability of groundwater to pollution and contamination. In addition, Scenario 2 would see the zoning of lands for residential use on areas (to the south west of the town) which have poor aquifer vulnerability and could therefore pose a pollution risk to groundwater in the area. (3) Increase the level of zoning for development and in particular would allow for industrial uses to the south west of the town which have poor aquifer vulnerability and could therefore pose a

	Scenario			
				pollution risk to groundwater in the area.
4. Protect and improve river water quality in Castlecomer.	-1	-1	-1	(1) (2) (3) would see the potential for run-off from industrial and residential areas into the river, which may impact significantly on river water quality. The extent of the impact of will also depend on improvements made to the water supply and wastewater treatment. Should these systems not be upgraded, the status of river water quality in Castlecomer may be further adversely affected. (2) More so than other options, this alternative will result in a greater level of development close to the river and its tributaries which will lead to a rise in vulnerability of groundwater and river water quality.
5. Protect and improve water quality and supply.	-1	-1	-1	(1) (2) (3) would be dependent on the steps taken to improve the current water supply.
6. Reduce vulnerability to effects of climate change, including flood risk.	-1	-1	-1	(1) (2) (3) All three alternatives include lands within areas liable to flooding, however (2) will result in a greater quantum of development at these locations. Whilst (3) will also result in additional lands zoned in the flood plain, it includes a requirement for setback for new development.
7. Protect and conserve Castlecomer's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows.	-1	-1	-1	(1) (2) (3) will provide for the general protection of cultural heritage. Amendments to the Record of Protected Structures cannot be completed through the Local Area Plan process. Specific objectives could be included to protect structure on the RPS and the National Inventory of Architectural Heritage.
8. Protect and enhance valued natural and historic landscapes and features within them, including scenic views.	-1	-1	1	(1) (2) Do not designated additional open space due to landscape value. (3) Increase open space designation for areas with significant landscape value
9. Protect and enhance soil	-1	-1	-1	(1) (2) (3) would involve development on a number of greenfield sites which is likely to

	Scenario			
and air quality.				result in soil removal and impact on soil quality through the introduction of impermeable services. The highest quantum of development is likely to result from alternatives (2). Poor air quality is most likely to result from private transport and traffic congestion. Alternatives (1) (2) (3) do not propose any significant improvements to public transport although walking and cycling networks could be enhanced.
TOTAL	-8	-9	-6	The location of new development as per the three alternatives outlined in Figure 9.4 is likely to have a range of effects which have been evaluated and compared with respect to the environmental objectives. This assessment has primarily focused the general location of new development rather than any detail policy objectives which may be reasonably be expected to be included within a Local Area Plan. The evaluation suggest that there are a number of potential effects associated with all development alternative with alternative strategy 3 providing for the least damaging outcome.

Score	Definition
-1	Significant adverse impact
?	Uncertain impact
1	Significant beneficial impact
0	No relationship, or insignificant impact