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Macroom Town Council  
*Comhairle Baila Maigh Chromtha*

# MACROOM

## Development Plan 2009 - 2015

**Volume 3 - Strategic Environmental Assessment**





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- Appendix 1      Designated Sites
- Appendix 2      Habitats Directive Appropriate Assessment

# 1 INTRODUCTION

## 1.1 BACKGROUND

This is a Strategic Environmental Assessment (SEA) for the Macroom Town Development Plan.

The previous Macroom Town Plan sets out the overall strategy for the development of Macroom town and was adopted in 2003 and remained in force until 2009.

Macroom Town Council prepared a new Town Development Plan under the Planning and Development Act (2000) which requires the Planning Authority to prepare a "Development Plan" every six years for its jurisdiction.

As part of this development plan process, RPS Group Plc. undertook this Strategic Environmental Assessment (SEA), which is intended to identify and assess the issues facing the Macroom Town Council area going forward. This Environmental Report will be made available to the public along with the Adopted Macroom Development Plan. The Environmental Report has guided the preparation of objectives, policies and development scenarios for the Development Plan with an ultimate goal of achieving sustainable development within the Macroom Town Council area.

The SEA process was undertaken in parallel with each stage of the Plan making process and involved close consultation and meetings with the SEA Consultation Authorities, members of THE National Building Agency Ltd. that drafted the Macroom Town Development Plan 2009 - 2015, the SEA team and a number of specialists who focused on the significant environmental issues of the plan as identified during the screening and scoping phases and assessment of baseline information for the area.

## 1.2 STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Strategic Environmental Assessment (SEA) is a process for evaluating, at the earliest appropriate stage, the environmental quality and consequences of Policy, Plan or Programme initiatives by statutory bodies. The purpose is to ensure that the environmental consequences of plans and programmes are assessed both during their preparation and prior to adoption. The SEA process also gives interested parties an opportunity to comment on the environmental impacts of the proposed plan or programme and to be kept informed during the decision making process.

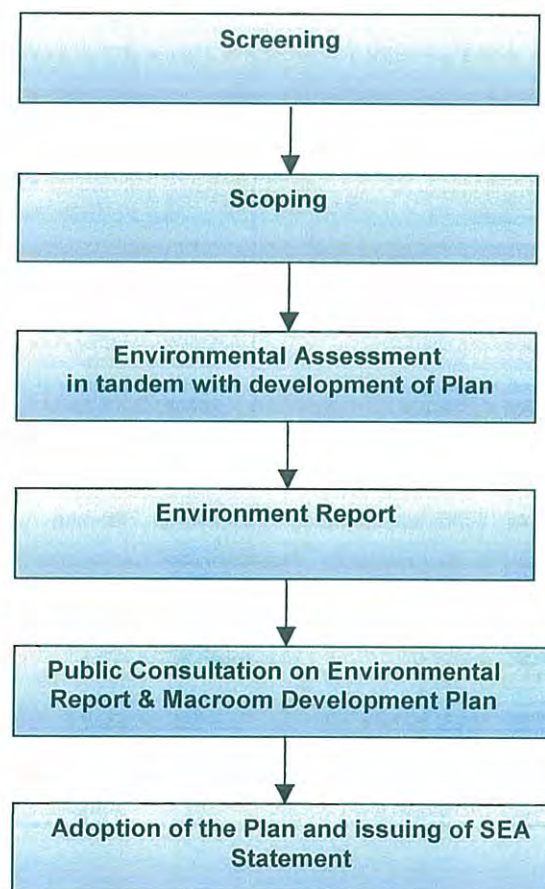
The European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the SEA Directive), was transposed into national legislation in Ireland by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435/2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436/2004).

The stages of the SEA can be seen in Figure 1.1 and comprise the following:



- Screening of Plans and Programmes to establish whether the relevant plan or programmes must undergo an SEA;
- Scoping Report -This Scoping Report forms part of the statutory scoping process as required by Article 11(1) of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. 435 of 2004. The purpose of this report is to present the current understanding of the key environmental issues relating to the Macroom Development Plan Study Area and to inform the identification and assessment of possible options at a strategic level. It also aims to generate comments from stakeholders on the scope and the SEA approach adopted for the Macroom Development Plan
- An Environmental Report - containing the findings of the Assessment on the likely significant effects on the environment of the Plan;
- Consultation on the Draft Plan and associated Environmental Report; and
- An SEA Statement - identifying how environmental considerations and consultations have been integrated into the Final Plan.

**Figure 1.1: Stages of the SEA Process**



### 1.3 PREPARATION OF THE ENVIRONMENTAL REPORT AND THE MACROOM DEVELOPMENT PLAN

In accordance with the provisions of Article 13A of The Planning and Development (Strategic Environmental Assessment) Regulations 2004, it was determined that the Macroom Development Plan would be required to be Strategic Environmentally Assessed in tandem with the preparation of the Macroom Development Plan 2009 - 2015. The proposed plan was screened in terms of the provisions of Article 13A of The Planning and Development (Strategic Environmental Assessment) Regulations 2004. Taking account of the relevant criteria set out in schedule 2A of the Regulations it was considered that Macroom Town Council is required to prepare an Environmental Report in respect of the preparation of the Macroom Development Plan for the following reasons.

- The plan would set a framework for projects and other activities, with regard to the location, nature, size and operating conditions or by allocating resources to the projects or activities;
- The plan influences non - statutory plans, guidelines and strategies within Macroom Town Council area. It also influences the Cork County Development Plan in terms of provision of development within the Macroom Environs in the Macroom Electoral Local Area Plan 2005;
- The plan would be relevant in terms of the integration of environmental considerations in particular with a view to promoting sustainable development;
- There is a possibility that proposals within the plan could create environmental problems to the plan area;
- It was considered that due to the sensitive nature of the area and due to its close proximity to a European site, it is possible that the proposed plan could potentially cause environmental impacts to the Macroom area and the Gearagh SAC and SPA.
- The Gearagh which is located 1 km south of Macroom Town centre and partly within the Town Council boundary is designated as a cSAC and SPA and therefore would be governed by European Communities (Natural Habitats) Regulations 1997, which is European Union legislation on the environment. Therefore EU legislation would need to be implemented within the plan area due to potential impacts on The Gearagh SPA and cSAC.

The Environmental Report provides a Strategic Environmental Assessment (SEA) of the Macroom Town Plan, including its main objectives and policies.

The Planning and Development Act (2000) as amended requires the Planning Authority to prepare a "Development Plan" every six years for its jurisdiction. The Macroom Development Plan was adopted in 2003. The Statutory preparation of the Plan began in 19<sup>th</sup> of October 2007 (4 years later), whereby a notice of intention to prepare the Macroom Town Development Plan 2009 – 2015 was issued. Submissions and observations were invited from the public and the closing date for submissions was on the 21<sup>st</sup> December 2007. The County Manager's Report on the issues raised in the submissions was adopted on the 15<sup>th</sup> April 2008. Table 1.3.1 below summarises the timetable for release of documents.



**Table 1.3.1 Timetable of Draft Plan and Strategic Environment Assessment**

Date	Development Plan	Strategic Environmental Assessment
19 <sup>th</sup> October 2007 21 <sup>st</sup> December 2007	Strategic Issues Paper for Public Consultation	Screening of draft Plan
15 <sup>th</sup> April 2008	s. 11 Manager's Report on submissions	Scoping Report (Statutory consultation with Environmental Authorities)
May - July 2008	Preparation of Draft Macroom Development Plan	Preparation of Draft Environmental Report
July 2008	Presentation of Draft Town Development Plan to Members	Presentation of Draft Environmental Report to Members
September 2008 November 2008	Public consultation of Draft Macroom Development Plan	Public Consultation of Draft Environmental Report
February 2009	Presentation of Draft s. 12 Mangers Report Members	
May 2009 June 2009	Public consultation of Draft s. 12 Mangers Report and amendments	
August 2009	Presentation of Draft s. 12(8)a Mangers Report on submissions to Members	
August 2009	Final Adopted Macroom Development Plan	SEA Statement



## 2 SEA METHODOLOGY

The SEA methodology used to carry out the SEA of the proposed Macroom Development Plan reflects the requirements of the SEA Directive (2001/42/EC) as transposed into Irish law (S.I. No. 436 2004) and also experience drawn from other SEA's carried out in Ireland and the UK. The following documents, in particular, have also been used as guidance:-

- Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland, Synthesis Report, EPA (2003);
- Draft Scoping Checklist as issued by the EPA in Jan 2008;
- Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment. Guidelines for Regional Authorities and Planning Authorities (DoEHLG, 2004);
- *Draft Strategic Environmental Assessment (SEA) Checklist*. Expected publication date(s) Jan - Mar 2008. Environmental Protection Agency;
- Guidelines on SEA. Department of Communications, Energy and Natural Resources. Available at: <http://www.dcmnr.gov.ie/Marine/Environmental+Assessment/Environmental+Assessment.htm>;
- *A Practical Guide to the Strategic Environmental Assessment Directive*. September 2005. Office of the Deputy Prime Minister;
- *Strategic Environmental Assessment. Services and Standards for Responsible Authorities*. Environment and Heritage Service;
- *Strategic Environmental Assessment Toolkit (Version 1)*. September 2006. Scottish Executive; and
- *Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners*. June 2004. Countryside Council for Wales, English Nature, the Environment Agency and the RSPB.

Under consideration is a proposed preparation of the Macroom Development Plan which has the potential to impact on the receiving environment. The main steps taken in this SEA process involved screening, scoping, baseline study, consideration of alternatives, environmental assessment of the objectives and policies of the proposed variation and the formulation of mitigation and monitoring measures.

## 2.1 SCREENING

In accordance with the provisions of Article 13A of The Planning and Development (Strategic Environmental Assessment) Regulations 2004, it was determined that the Macroom Development Plan would be required to be Strategically Environmentally Assessed in tandem with the preparation of the Macroom Development Plan 2009 - 2015. The proposed plan was screened in terms of the provisions of Article 13A of The Planning and Development (Strategic Environmental Assessment) Regulations 2004. Taking account of the relevant criteria set out in schedule 2A of the Regulations it was considered that Macroom Town Council is required to prepare an Environmental Report in respect of the preparation of the Macroom Development Plan for the following reasons.

- The plan would set a framework for projects and other activities, with regard to the location, nature, size and operating conditions or by allocating resources to the projects or activities;
- The plan influences non - statutory plans, guidelines and strategies within Macroom Town Council area. It also influences the Cork County Development Plan in terms of provision of development within the Macroom Environs in the Macroom Electoral Local Area Plan 2005;
- The plan would be relevant in terms of the integration of environmental considerations in particular with a view to promoting sustainable development;
- There is a possibility that proposals within the plan could create environmental problems;
- It was considered that due to the sensitive nature of the area and due to its close proximity to a European site, it is possible that the proposed plan could potentially cause environmental impacts to the Macroom area and the Gearagh SAC and SPA..
- The Gearagh which is located 1 km south of Macroom is designated as a cSAC and SPA and therefore would be governed by European Communities (Natural Habitats) Regulations 1997, which is European Union legislation on the environment. Therefore EU legislation would need to be implemented within the plan area due to potential impacts on The Gearagh SPA and cSAC.

Therefore, following a screening exercise, Macroom Town Council determined that a strategic environmental assessment would be warranted in this case. This decision is available in the public file in Macroom Town Council.



## 2.2 SCOPING

Once determined that an SEA is required for a given plan or programme, in this case the proposed preparation of the Macroom Development Plan, an environmental report must be prepared. A scoping report for the subject plan was sent to the following statutory Consultees on the 4<sup>th</sup> of June 2008. In Ireland, three statutory Consultees have been nominated:-

The Environmental Protection Agency (EPA);

The Department of the Environment, Heritage and Local Government (DoEHLG); and

The Department of Communications, Marine and Natural Resources (DCMNR).

RPS on behalf of Macroom Town Council undertook formal scoping of the SEA Environmental Report with the three statutory Consultees on the 4<sup>th</sup> June 2008. The Department of the Environment, Heritage and Local Government (DoEHLG) responded to the consultation on the 27<sup>th</sup> of June 2008, the Department of Communications, Marine and Natural Resources (DCMNR) on the 1<sup>st</sup> July 2008 and the Environmental Protection Agency (EPA) responded to the scoping consultation on the 8<sup>th</sup> July 2008.

The scoping exercise for this SEA determined the potential key environmental impacts and outlined how they should be addressed as part of the Environmental Report (Table 2.1)

**Table 2.1: Key Environmental Impacts Determined from Screening and Scoping Phases**

Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
Biodiversity (EPA and DoEHLG)	<p>Potential impacts of any proposed objectives, policies, newly zoned or re-zoned lands in the proposed Macroom Town Development Plan in relation to the flora and fauna, habitats and biodiversity as well as any potential impacts on the designated SACs, and SPAs in the vicinity of the site.</p> <p>There is potential for interaction with all aspects of the water environment, i.e. wastewater, drainage, flooding, etc.</p> <p>Potential for a decrease in water quality of the Sullane River.</p>	<p>Appropriate Assessment in parallel with the SEA.</p> <p>A specific objective for a phased and co-ordinated programme of Habitat Mapping of Macroom and adjoining area should be included in the Plan in accordance with the habitat mapping currently being pursued by Cork County Council on an electoral area basis.</p> <p>Buffer zones so as to protect features of European, national, regional county and local importance including rivers and streams from development proposals both in terms of visual and ecological impacts.</p>



Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
	<p>The impact on biodiversity represented by protected species of fauna with breeding or resting places, particularly along ecological corridors including hedgerows, rivers (riparian zones)</p> <p>Potential impacts from non-native species should be addressed i.e. Rhododendron, zebra mussel</p>	<p>The Town Plan, should include an objective to ensure development in the Macroom area and the provision of services (e.g., roads, wastewater and waste related services etc.) in the Macroom area take into account the Management Plan, where, available, for Gearagh cSAC/SPA.</p> <p>Objective in the Plan to protect wetlands, and associated surface and groundwater systems within the Town Plan area.</p> <p>The plan should have regard to the EU Protected Habitats and Species in Ireland <i>and Alien species and Noxious Weeds</i></p>
<p>Flooding (EPA and DoEHLG)</p>	<p>Potential flooding issues in the area. Incidences of flooding reported in the Town Council area</p> <p>Changes to traditional floodplains due to bank armouring etc.</p>	<p>OPW flood maps should be referenced as part of the SEA baseline.</p> <p>Flood maps should be referred to in planning applications</p> <p>A specific objective should be included to provide for appropriate flood risk assessments to be undertaken, where proposed development(s) and proposed zoning in areas within the floodplain of rivers or adjoining coastal areas is being considered.</p>
<p>Water (EPA and DoEHLG)</p>	<p>Transitional water, rivers and tributaries within Macroom Town Council is classified as 'possibly at risk of not achieving good status', in accordance with the Water Framework Directive Characterisation- Risk Categorisation.</p> <p>Areas within the Development Plan with Extreme groundwater vulnerability ratings and areas with Rock near Surface or Karst.</p> <p>Due to excessive levels of Aluminium in treated water, there is a need for the provision of a safe and secure water supply in Macroom</p> <p>If additional lands for residential development is being proposed in the Plan, consideration should be given, to the adequacy of the existing water supply in terms of both quality and quantity and the</p>	<p>Policies and Objectives and conditions attached to planning authorisations should ensure that the ongoing development of the Town is undertaken in such a way so as not to compromise the quality of surface water (and associated habitats and species) groundwater within the zone of influence of the Development Plan area.</p> <p>New objective for a Groundwater Protection Plan for groundwater resources in the Macroom area in accordance with the Groundwater Protection Scheme for Cork County.</p> <p>The Plan should implement and include, as appropriate, the relevant recommendations set out in The Provision and Quality of Drinking Water in Ireland –A Report for the Years 2006-2007, (Office of Environment Enforcement- EPA, 2007) as</p>



Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
	<p>supply in terms of both quality and quantity and the potential risk to human health.</p> <p>Waste Water Treatment plant is at capacity.</p>	<p>included below in Section 4 of the SEA Pack. You are referred to this Report at: <a href="http://www.epa.ie/downloads/pubs/water/drinking/">http://www.epa.ie/downloads/pubs/water/drinking/</a></p> <p>Plan should include specific objectives for the Macroon Drinking Water Supply See <a href="http://www.epa.ie/downloads/data/water/name,24319,en.html">http://www.epa.ie/downloads/data/water/name,24319,en.html</a>.</p> <p>Include specific objective for the preparation of a Water Conservation Strategy for Macroon town and surrounding area as appropriate.</p> <p>Develop an appropriate solution that will involve abandoning or replacing the source, upgrading the treatment facilities or improving management and operational practices.</p> <p>The plan should include the specific provisions of the Urban Waste Water Discharges in Ireland, A report for the Years 2004 and 2005 <a href="http://www.epa.ie/downloads/pubs/water/wastewater/name_13978.en.html">http://www.epa.ie/downloads/pubs/water/wastewater/name_13978.en.html</a></p> <p>Include relevant policies and objectives for the provision and promotion of adequate and appropriate Sustainable Urban Drainage Systems (SUDS).</p>
<p>Waste Water Treatment Plant Water Quality (EPA and DoEHLG)</p>	<p>Potential for a decrease in water quality of in the area due to the fact that the WWTP is at capacity and could be over used.</p>	<p>SEA to address capacity and operating standards of the WWTP.</p> <p>The Plan should include a policy to ensure that all developments currently served by septic tanks should be connected to the WWTP where possible.</p> <p>The Plan should include a policy that all new developments use separate systems for foul and storm water sewage.</p> <p>To ensure separation of foul and surface water effluents through the provision of separate collecting networks and to ensure that all new developments provide separate collecting systems.</p> <p>Ensure a timeline for upgrading or development of a new WWTP is proposed in the plan.</p>
<p>Population and</p>	<p>Population Statistics</p>	<p>Review population figures giving new percentages</p>



Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
Health (EPA and DoEHLG)	<p>Employment/unemployment</p> <p>Human Health - The following should be assessed in the town plan; Provision of adequate and appropriate amenity to serve both existing community and likely future increases in population; Provision of education and health services; Provision of adequate and appropriate cycleway and footpath networks along with adequate relevant signage; Promotion of the protection of existing natural and cultural heritage resources in the area as a local amenity and an educational resource; Protection of the air quality in the Macroom area; Provision of broadband (for work at home); Provision of childcare facilities near work places; Localised campaigns to encourage exercise and healthy living for all ages.</p>	<p>from NSS, CASP and CDP 2003 and Draft CDP2007.</p> <p>Appropriate policies and objectives with associated commitment and timescales, where necessary, are included in relation to the provision of adequate and appropriate wastewater treatment in for Macroom.</p>
Material Assets (DoEHLG)	<p>New buildings should consider use of renewable material</p>	<p>Ensure a Sustainable building practice policy is included within the plan.</p> <p>Consideration should be given to the implementation of an integrated approach to waste management for any proposed development(s) within the Town.</p>
Landscape (EPA)	<p>Visual impacts may arise from development within the town. The implications of development of zoned lands on existing landscape form and features and on scenic views and routes should be investigated with a view to ensuring such views/ features are protected from proposed development of the area. The implications of the development of zoned lands within the Plan area on the Scenic Routes A38 and A26 and Scenic Landscape to the west and southwest of the town will be considered and addressed within the Environmental Report.</p> <p>Key views, vistas, prospects, sensitive landscapes, river corridors etc all need to be addressed.</p>	<p>Recommend detailed landscape assessments where appropriate.</p> <p>Ensure policies included within the plan to protect existing sensitive and scenic landscapes, scenic views and scenic routes as outlined in the CDP 2003.</p>
Cultural Heritage (DoEHLG)	<p>Zone of Archaeological Importance in Macroom town. In addition, there may be undiscovered sub-surface archaeological sites/monuments within the</p>	<p>Insert Tree Preservation Order Objective in plan</p> <p>Include protective objectives on heritage</p>



Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
	<p>town. It is recommended that these issues be investigated within the Environmental Report.</p> <p>Ensure to distinguish between National Monuments, Recorded Monuments and Places (RMPs) in Macroom and Record of Protected Structures (RPS). Refer to <a href="http://www.archaeology.ie">www.archaeology.ie</a></p> <p>Any potential impacts on archaeological heritage should be subject to full archaeological assessment.</p> <p>Industrial Heritage should be addressed.</p> <p>Promotion of linkages between significant features of archaeological/architectural significance.</p> <p>Protection of important trees in the town.</p>	
Soil (EPA and DoEHLG)	<p>Impacts to Greenfield sites</p> <p>Soil and groundwater contamination and the risks associated with site development work, where Brownfield development is proposed in Macroom.</p>	<p>Use of brownfield sites over Greenfield sites</p> <p>A policy/objective should be included in the Plan to ensure adequate and appropriate investigation of the nature and extent of any soil and groundwater contamination and the risks associated with site development work, where Brownfield development is proposed in Macroom.</p>
Transport (EPA and DoEHLG)	<p>Traffic, parking and mobility issues will require particular attention;</p> <p>Pedestrian facilities, public transport and cycle lanes will need to be addressed in the plan in a balanced and sustainable manner.</p> <p>Considerations should be given in including specific objectives in the Plan in relation to the protection and improvement, as appropriate, of air quality in Macroom, particularly in areas zoned for increased urban development and transport related development.</p> <p>Consideration should also be given to the inclusion of specific policies and objectives with respect to climate change.</p> <p>A By-pass is proposed for the town.</p>	<p>Consideration should be given to the inclusion of a Target relating to the improvement of the current transport network in the Macroom area.</p> <p>A policy outlining the need for improved pedestrian and cycle facilities and good quality public transport should be included within the plan.</p> <p>Development of traffic management measures to reduce the potential for traffic congestion and associated vehicular emissions should be considered for Macroom Town.</p> <p>The Environmental Report should assess any potential environmental impacts from traffic related policies and objectives of the Macroom Town Development Plan.</p>
Other	Objectives, Indicators and Targets	Use similar indicators, and targets as used within

Environmental Topic (Party inputs in brackets)	Issues	Mitigation/Recommendations
	The Plan should include relevant policies and objectives for the Promotion of energy conservation measures in buildings and Promotion, where appropriate, of the use of renewable energy systems (e.g. solar, wind, geothermal etc.) within the community.	the Draft CDP 2007. Provide for consistency in monitoring across the county.

## 2.3 ENVIRONMENTAL REPORT

The Environmental Report contains an assessment of the likely significant effects (on biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors) of implementing the proposed plan.

The content of the Environmental Report is broadly defined in Article 12 (1) of the Regulations.

Chapter Title	Reference to Table 4A of the PG (Planning Guidelines)
Non-Tech summary	Ref. J
Introduction	
SEA Background and Methodology	
Key Objectives of the Plan	Ref. A
Planning and Policy Context	Ref. A and Ref. E
Baseline Environment	Ref. B, C and D
Objectives Targets and Indicators	Ref. C and Red. D
Assessment of Alternatives	Ref. J and H
Assessment of Policies/Objectives	Ref. B
Significant Effects and Mitigation Measures	Ref. D, F, I and G
Monitoring	Ref. I



## **2.4 CONSULTATION**

The draft Macroom Town Development Plan and Environmental Report went on public display between September to November 2008 and submissions were invited from the public, from the relevant statutory bodies and the Environmental Authorities.

In order to document the SEA process, since the initial Consultation draft of the Environmental Report, this environmental report has been updated to include the recommended changes to the environmental report resulting from the consultation process and any changes arising from the relevant amendments to the plan.

### **2.4.1 Consultation Response from Environmental Authorities**

Consultation responses were received by Macroom Town Council from the Department of the Environment, Heritage and Local Government (DoEHLG) and the Environmental Protection Agency (EPA) in November 2008.

A submission from the DoEHLG Spatial Planning Policy Development Applications Unit was received however no comments were received in relation to the Environmental Report.

A submission from the EPA was received relating to the possible impacts of the Draft Development Plan on various aspects of the environment and also included comments relating to the Environmental Report. The EPA submission was broken into two parts and the second part of the submission related to the Environmental Report for the Draft Development Plan. Comments and suggestions in this section put forward for consideration mainly related to the key stages and outputs of the SEA process.

In response to the submission made by the EPA to the consultation draft Environmental Report a new section table was drawn up linking potential environmental impacts, mitigation measures and monitoring measures of the draft Plan (see Table 9.1 in section 9). This table also references how the relevant mitigation measures of significant effects have been incorporated into the plan.

### **2.4.2 Consultation of Habitats Directive Assessment**

A Habitats Directive Assessment of the draft Plan was also undertaken by RPS Group and the associated assessment report is attached in Appendix 2 of this report. This document went on public display during the Amendment Stage consultation period. During this process the NPWS were also consulted.



### **2.4.3 Assessment of Material Amendments**

As a result of the initial consultation submissions made to the draft plan a number of amendments were recommended by the Manager and were set out in the Section 12 (4) Manager's Report which went on public consultation between May and June 2009. The proposed amendments were also environmentally assessed and this assessment also went out to consultation with the proposed amendments. The environmental assessment of the policies and objectives of the Plan as set out in Table 8.2 of this report have been updated to reflect the amendments to the Plan.

After the initial consultation period of the amendments as per the Section 12(4) Managers in May/June 2009 the Manager drafted the S. 12 (8) Manager's Report setting out the Manager's Response and Recommendations to the issues raised in the submissions received during the statutory public consultation period. The s.12 (8) Managers Report was presented to the members in August 2009. No material changes to the Plan were proposed at this stage and therefore no additional amendments were assessed in terms of SEA at this stage.

To conclude it was not considered that any of the proposed amendments of the Plan would have a significant impact on the environment of the area.

### **2.4.4 Adoption of the Plan**

The Plan was formally 'made' at a formal meeting on the August 2009. At this meeting the Council accepted all recommendations contained in the s.12 (8) report and agreed to adopt the amended draft development plan.

### **3 THE MACROOM DEVELOPMENT PLAN 2009-2015 OVERALL OBJECTIVES OF THE PLAN**

The Macroom Development Plan 2009 outlines the Council's policies for the development of Macroom Town to 2015.

The plan has been prepared and developed against a backdrop of consultations by means of public meeting, individual meetings, and written submissions. The plan, as the main public statement of the town council, provides a vision for the town to evolve, giving statutory context for guiding development in the interests of the proper planning and sustainable development of the town.

The purpose of the Development Plan is to provide guidance on the future development of Macroom and to ensure that such development occurs in a planned and orderly manner. It seeks to address:

- The need to accommodate the future growth of Macroom, which has been designated as a 'Ring Town' in the Cork Area Strategic Plan.
- The need to provide adequate economic and employment opportunities in the area.
- The need to protect the town's existing heritage and its important environmental amenities.
- The need for increased community services and facilities such as school extensions, sports and recreation facilities, health facilities etc.
- The need to provide facilities close to new residential developments.
- The need to provide adequate open space to meet the demands of a growing population, e.g. playgrounds, playing fields and public parks.



## 4 RELATED PLANS

The SEA Directive requires that the SEA process should include the review of other Plans/Programmes, which are related to the Plan/Programme being assessed i.e. the Macroom Development Plan. Any identified actions from this study will need to comply with relevant international and national legislation such as the Water Framework Directive (WFD) and the Habitats and Bird's Directives that stringently protect Special Areas of Conservation (SACs) and Special Protected Areas (SPAs) within the catchment. The requirements will be expressed in the environmental objectives.

Tables 4.1 to 4.3 below provide an overview of the relevant legislation, plans, policies that apply to the various environmental topics to be addressed in this Environmental Report.

**Table 4.1: Overview of International Legislation, Plans, Policies and Programmes**

Topic	Title	Summary of Objectives
Biodiversity	UN Convention on Biological Diversity (1992)	Objectives include the maintenance and enhancement of Biodiversity.
	The Ramsar Convention The Convention on Wetlands of International Importance (1971 and amendments)	Objectives include protection and conservation of wetlands, particularly those of importance to waterfowl as Waterfowl Habitat.
Climate	UN Kyoto Protocol The United Nations Framework Convention on Climate Change (UNFCCC) Kyoto Protocol 1997	Objectives seek to alleviate the impacts of climate change and reduce global emissions of GHGs.
Environment	Agenda 21	Local Agenda 21 is a process which facilitates sustainable development at community level. It is an approach based on participation, which respects social, cultural, economic and environmental needs of the present and future citizens of a community in all its diversity and how the community relates to the future of the regional, national and international community of which it is part.
	The 6 <sup>th</sup> EU Environmental Action Programme 1998.	The Environment Action Programme takes a broad look at the challenges of environmental policy and provides a strategic framework for the Commission's environmental policy up to 2012. It identified four environmental areas for priority actions: <ul style="list-style-type: none"> <li>• Climate Change</li> <li>• Nature and Biodiversity</li> <li>• Environment and Health and Quality of Life</li> <li>• Natural Resources and Waste</li> </ul>

Topic	Title	Summary of Objectives
	The MARPOL Convention International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).	Objectives include for the protection of the marine environment.
	The OSPAR Convention The Convention for the Protection of the Marine Environment of the North-East Atlantic (22 September 1992).	Objectives include the protection of the marine environment.
	COMAH (Seveso II) Directive- European Communities (Control of Major Accident Hazards involving dangerous Substances) Regulations 2000	Requirements for the storage of relatively large quantities of substances classified as dangerous.
Human Health / Air	World Health Organisation (WHO) Air Quality Guidelines (1999) and Guidelines for Europe (1987)	Objectives seek the elimination or minimisation of certain airborne pollutants for the protection of human health.

**Table 4.2 Overview of EU Legislation, Plans, Policies and Programmes**

Topic	Title	Summary of Objectives
Air	The Air Framework Directive Directive on Air Quality Assessment and Management (Framework Directive) (1996/62/EC)	Objectives include the prevention and/or reduction of airborne pollutants for the protection of human health and environment.
	Directive on National Emission Ceilings for Certain Atmospheric Pollutants (2001/81/EC)	Objectives seek to limit the national emissions of certain airborne pollutants for the protection of human health and the environment.
Biodiversity	The EU Biodiversity Strategy Communication on a European Community Biodiversity Strategy	Objectives seek to prevent and eliminate the causes of biodiversity loss and maintain and enhance current levels of biodiversity.
	The EU Habitats Directive (92/43/EEC)	Objectives seek to prevent and eliminate the causes of habitat loss and maintain and enhance current levels of biodiversity.
	The EU Birds Directive (as modified) (EC/79/409)	Objectives seek to prevent and eliminate the causes of bird species loss and maintain and enhance current levels of biodiversity.
	The EU Shellfish Directive (79/923/EEC)	Objectives seek to maintain those coastal and brackish waters, which need protection or improvement, in order to allow shellfish to develop and to contribute to the high quality of shellfish products intended for human consumption.



Topic	Title	Summary of Objectives
	The EU Freshwater Fish Directive (78/659/EEC)	Objectives seek to protect those fresh water bodies identified by Member States as waters suitable for sustaining fish populations. For those waters it sets physical and chemical water quality objectives for salmonid waters and cyprinid waters
Climate	Second European Climate Change Programme (ECCP II) 2005.	Objectives seek to develop the necessary elements of a strategy to implement the Kyoto protocol.
Human Health	The EU Environment and Health Strategy 2004-2010 (first period)	Objectives seek to prevent and reduce the impacts of pollution on human health.
	The EU REACH Initiative Registration, Evaluation and Authorisation of Chemicals (REACH)	Objectives seek to limit the harmful effects to the environment and human health from certain chemicals through improved analysis and data collection.
	Laying down the Health Conditions for the production and placement on the market of live bivalve molluscs (91/492/EEC)	Objectives seek to ensure a suitable environment for shellfish growth and protect consumers of shellfish. It classifies shellfish harvesting areas according to the quality of shellfish populations. The classification determines the conditions under which shellfish harvested from those waters can be offered for sale.
Sustainable Development	The Gothenburg Strategy (2001) Communication from the Commission on "a Sustainable Europe for a Better World"	Objectives seek to make the future development of the EU more sustainable.
	The Sixth Environmental Action Programme (EAP) of the European Community 2002- 2012	Objectives seek to make the future development of the EU more sustainable.
	The SEA Directive (2001/42/EC)	Under the SEA Directive, the RBDMP requires an SEA.
Water	The Water Framework Directive EU Water Framework Directive (2000/60/EC)	Objectives seek to maintain and enhance the quality of all surface waters in the EU. The RBMPs are a requirement of this directive.
	The Groundwater Directive (1980/68/EC)	Objectives seek to maintain and enhance the quality of all groundwater in the EU.
	EU Floods Directive (2007/60/EC)	The Floods Directive applies to river basins and coastal areas at risk of flooding. With trends such as climate change and increased domestic and economic development in flood risk zones, this poses a threat of flooding in coastal and river basin areas.
	Bathing Water Directive 2006/7/EC	The overall objective of the revised Directive remains the protection of public health whilst bathing, but it also offers an opportunity to improve management practices at bathing waters and to standardise the information provided to bathers across Europe.
	Nitrates Directive 91/676/EEC	This Directive has the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution.
	Urban Wastewater Treatment Directive 91/271/EEC. Amended under Directive 98/15/EEC	The primary aim is to protect the environment from the adverse effects of discharges of urban wastewater, by the provision of urban wastewater collecting systems (sewerage) and treatment plants for urban centres. The Directive also provides general rules for the sustainable disposal of sludge arising from wastewater treatment.



Topic	Title	Summary of Objectives
	Natura 2000 sites designated under Directive 92/43/EC and 79/409/EEC	The purpose is to enable Habitats Directive Annex I habitats or Annex II species to be maintained, or restored to a favourable conservation status over their natural range. Also, to conserve habitats for bird species under the Birds Directive Annex I.
	Groundwater Directive (2006/118/EC)	This new directive establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater.
	Drinking Water Directive (DWD) Council Directive 98/83/EC	The primary objective is to protect the health of the consumers in the European Union and to make sure the water is wholesome and clean.
Cultural Heritage	The European Convention on Protection of the Archaeological Heritage (The Valletta Convention of 1992)	Requires that appropriate consideration is given to archaeological issues at all stages of the planning and development process.
Landscape	European Landscape Convention 2000	Requires a commitment from Ireland to introduce policies to effect landscape protection and management.

Topic	Title	Summary of Objectives
Air	Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002)	Objectives include the reduction of certain airborne pollutants for the protection of human health and the environment.
	Ozone in Ambient Air Regulations 2004 (S.I. No. 53 of 2004).	Objectives include the reduction of certain airborne pollutants for the protection of human health and the environment.
	The Environmental Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999	Objectives include the reduction of certain airborne pollutants for the protection of human health and the environment.
Biodiversity	The National Biodiversity Plan (2002)	Objectives include the enhancement and conservation of biodiversity.
	The Wildlife Act 1976. The Wildlife (Amendment) act 2000	The Wildlife Act, 1976 and the Wildlife Amendment Act, 2000 are the principal statutory provisions providing for the protection of Wildlife (both Flora and Fauna) and the control of activities which may impact adversely on the conservation of Wildlife.
	National Heritage Plan 2002-2007	The purpose of the National Heritage Plan is to set out a clear and coherent strategy and framework for the protection and enhancement of Irish heritage over the five year period.
	European Communities (Natural Habitats) Regulations, SI 94/1997, as amended SI 233/1998 and SI 378/2005	These Regulations give effect to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and the Minister to designate special areas of conservation (endangered species and habitats of endangered species) as a contribution to an EU Community network to be known as NATURA 2000.



Topic	Title	Summary of Objectives
	Flora Protection Order 1999	Objectives include it being illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation.
	Quality of Shellfish Waters Regulations 1994 (SI 200/1994) and amendments	Give effect to Council Directive 79/923/EEC of 30 October 1979 on the quality required of shellfish waters and prescribe quality standards for shellfish waters and designate the waters to which they apply, together with sampling and analysis procedures to be used to determine compliance with the standards.
	Quality of Salmonid Waters Regulations 1988 (SI 293 of 1988)	Prescribe quality standards for salmonid waters and designate the waters to which they apply, together with the sampling programmes and the methods of analysis and inspection to be used by local authorities to determine compliance with the standards. Also, give effect to Council Directive No. 78/659/EEC on the quality of fresh waters needing protection or improvement in order to support fish life
Climate	National Climate Change Strategy (2000) and National Climate Change Strategy 2007-2012	Objectives include the reduction of national GHG emissions (including those from the water sector)
Human Health	Quality of Bathing Waters Regulations 1988 (SI 84 of 1988) and amendments	Prescribe bathing water quality standards and the bathing areas to which they apply, together with the sampling programmes and the methods of analysis and inspection to be used by local authorities to determine compliance with the standards. Give effect to Council Directive No. 76/160/EEC concerning the quality of bathing water.
Energy	Green Paper on Sustainable Energy (1999)	Objectives include the increased utilisation and development of renewable energies to meet EU targets
	Wind Energy Development Guidelines 2006	
	Delivering a Sustainable Energy Future for Ireland The Energy Policy Framework 2007-2020 (White Paper)	This White Paper sets out the Government's Energy Policy Framework 2007-2020 to deliver a sustainable energy future for Ireland. It is set firmly in the global and European context which has put energy security and climate change among the most urgent international challenges. The White Paper sets out the actions to be taken in response to the energy challenges facing Ireland. The objective is to deliver a sustainable energy future, starting now, with a time horizon of 2020 but also looking beyond that.
Planning	National Spatial Strategy 2002-2020 (2002)	Objectives of the NSS are to achieve a better balance of social, economic and physical development across Ireland, supported by more effective planning.
	National Development Plan from 2007 to 2013	Objectives of the NDP are to promote more balanced spatial and economic development.



Topic	Title	Summary of Objectives
	Planning and Development Act 2000	Revised and consolidated the law relating to planning and development by repealing and re-enacting with amendments the Local Government (Planning and Development) Acts, 1963 to 1999; to provide, in the interests of the common good, for proper planning and sustainable development including the provision of housing; to provide for the licensing of events and control of funfairs; to amend the Environmental Protection Agency Act 1992, the Roads Act 1993, the Waste Management Act 1996, and certain other enactments.
	National Anti Poverty Strategy (NAPS)	The National Anti-Poverty Strategy (NAPS) is the government strategic initiative to place the needs of the poor and the socially excluded at the top of the national policy agenda. The NAPS recognises the unacceptable scale of poverty and its impact on those directly affected and on the wider society and it particularly notes the distinct spatial aspects of poverty in urban and rural areas. The strategy emphasises the importance of a cross-departmental policy response in dealing with the problem.
	Retail Planning Guidelines 2005	The Retail Planning Guidelines provide a comprehensive framework to guide local authorities in preparing development plans, assessing applications for planning permission, and guiding retailers and developers in formulating development proposals. Retail functions reflect four broad tiers of urban development. Cavan Town is defined in the third tier of towns. Third tier centres are described as providing urban anchors for a rural economy which is undergoing rapid change
	Residential Density Guidelines for Planning Authorities	These Guidelines are aimed at addressing the high levels of suburban housing development at low densities on Green field sites over the last few decades. This has led to an increase in the demand for travel, greater traffic congestion and high infrastructure costs. The Guidelines recognise that higher densities should not be achieved at an unacceptable amenity cost to the surrounding dwellings and the residents of the proposed development. A high quality of design and layout and a good quality living environment, including the availability of adequate shopping, social, transport and leisure infrastructure, are essential if increased residential densities are to be acceptable.
Sustainable Development	Sustainable Development: A Strategy for Ireland (1997) (DoEHLG)	Objectives are to ensure that future development in Ireland occurs in a sustainable manner.
	European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004)	The EU SEA Directive was transposed into Irish Law under S.I. 435 in 2004.



Topic	Title	Summary of Objectives
	Sustainable Rural Housing Guidelines 2005	<p>These guidelines set out in detail how the Government's policies on rural housing are to be implemented by Planning Authorities in making their development plans and in the operation of the development control system to ensure a vibrant future for all rural areas. In supporting housing development patterns in rural areas that are sustainable, policies and practices of planning authorities should seek to:</p> <ul style="list-style-type: none"> <li>• Ensure that the needs of rural communities are identified in the development plan process and that policies are put in place to ensure that the type and scale of residential and other development in rural areas, at appropriate locations, necessary to sustain rural communities is accommodated.</li> <li>• Manage pressure for overspill development from urban areas in the rural areas closest to the main cities and towns such as the gateways, hubs, and other large towns.</li> </ul> <p>A strong theme in the Sustainable Rural Housing Guidelines is the need to strengthen villages and towns. Planning authorities need to ensure that cities, towns and villages offer attractive and affordable housing options to meet the housing needs of urban communities and persons wishing to live in urban areas.</p>
	Making Ireland's Development Sustainable	<p>This document focuses on the link between economic activity and pressures on the environment. Sustainable development emerged as an idea in the late 1980s and led to the Earth Summit in Rio de Janeiro in 1992. At the Summit, world leaders agreed to implement an action programme for sustainable development called, Agenda 21. The Irish Government published <i>Sustainable Development: A Strategy for Ireland</i> in 1997, which applies Agenda 21 in Irish circumstances. <i>Making Ireland's Development Sustainable</i> reviews the progress made in terms of sustainable development in Ireland since Rio, assesses the challenge we now face and sets out policies and actions to meet that challenge.</p>
Transport	Transport 21	<p>Transport 21 is a strategy that will see €34.4 billion invested over the next 10 years in Irish transport. Connecting communities and promoting prosperity is the core aim of this strategy. The programme seeks to meet the transport needs of the country's citizens and also underpin our competitiveness into the future. A comprehensive and efficient transport network is essential if we are to continue to improve our living standards while remaining competitive in the global market place. Transport 21 recognises that quality integrated transport is critical for competitiveness, return on investment and regional development.</p>
Environment	The Environmental Protection Agency Act 1992	<p>Objectives include the better protection of the environment and the control of pollution through improved licensing and monitoring.</p>
	The Protection of the Environment Act 2003	<p>Objectives include for better protection of the environment and the control of pollution through improved licensing and monitoring.</p>
Water	Drinking Water	<p>Prescribe quality standards to be applied in relation to</p>



Topic	Title	Summary of Objectives
	Regulations SI 439 of 2000	certain supplies of drinking water, including requirements as to sampling frequency, methods of analysis, the provision of information to consumers and related matters. Give effect to provisions of EU Council Directive 98/83/EC on the quality of water intended for human consumption.
	Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations 1998 (SI 258 of 1998)	Provide for specified improvements in water quality conditions in rivers and lakes based on phosphorus concentrations or related water quality classifications and give effect to certain requirements arising under Council Directive 76/46/EC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community.
	Water Quality in Ireland 2001-2003	This document assesses the quality of Ireland's aquatic ecosystems concentrating on ambient water quality indicators.
	Water Quality in Ireland 2005: Key indicators of the Aquatic Environment	The quality of rivers, lakes, estuaries, coastal waters, ground waters and canals is discussed in this report.
	Towards setting guideline values for the protection of groundwater in Ireland (2003)	Proposals for setting environmental quality objectives and standards for groundwater through use of guideline values.
	Groundwater Monitoring Programme	The information on which a national groundwater quality programme is based.
	European Communities (Water Policy) Regulations (SI 722 of 2003)	Provide for the transposition into Irish national law of the provisions of the EU Water Framework Directive.
	European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2005 (S.I. No. 378 of 2006)	Provide statutory support for good agricultural practice to protect waters against pollution from agricultural sources. Give further effect to several EU Directives including Directives in relation to protection of waters against pollution from agricultural sources ("the Nitrates Directive"), dangerous substances in water, waste management, protection of groundwater, public participation in policy development and water policy (the Water Framework Directive).
	Arterial Drainage Act, 1945	Makes provision for the drainage and improvement of land by the execution of works of arterial drainage, to provide for the maintenance of those works and make further and better provision for the maintenance of existing drainage works, and to provide for matters incidental to or connected with the matters aforesaid or relating generally to the drainage of land.
	OPW Guidelines on Flood Risk 2005	The OPW provide guidance on Planning Policy in relation to flooding. The policy which the Planning Authority should adopt is "Development should not itself be subject to an appropriate risk of flooding nor should it cause or exacerbate such a risk at other locations". This provides for run-off areas and the provision of appropriate drains. There should be set-back zones from the edge of watercourses. Minimum design standards should be applied, flood impact assessments to be required in certain developments and certification from a competent person that a development will not contribute to flooding within the relevant catchment.



Topic	Title	Summary of Objectives
Material Assets	Dumping at Sea Act, 1996	Make provision to control dumping at sea, to give effect to the convention for the protection of the marine environment of the north-east Atlantic at Paris on the 22nd day of September, 1992.
	Quarries and Ancillary Activities Guidelines 2004	Aggregates are a significant natural resource. The extractive industries make an important contribution to economic development in Ireland. However, the operation of quarries can give rise to land use and environmental issues which should be mitigated and controlled through the planning system. These Guidelines seek to identify those issues and to suggest best practice in dealing with them. It is important that Planning Authorities recognise that quarries (including sand-and-gravel pits) vary greatly in size, with varying environmental impacts, and that the planning response to proposed developments should be tailored accordingly.
	EPA Wastewater Treatment Manual 2000	The Waste Water Treatment Manual for single houses details the basic mechanism of the waste water treatment system, various types of systems, suitable site characteristics and treatment options. This document will be referred to by the Planning Authority, though may be replaced by updated versions.
	Irish National Forest Standard 2000	In 1996, the Irish Government published Growing for the Future: A Strategic Plan for the Development of the Forestry Sector in Ireland. The aim of this strategy is to develop forestry to a scale and in a manner which maximises its contribution to national economic and social well-being on a sustainable basis and which is compatible with the protection of the environment. In Growing for the Future, a commitment was made to promote quality in all aspects of Irish forestry and to provide the instruments to achieve this. The Irish National Forest Standard is the result of a consultative process initiated in 1999. Working parties were set up to consider environmental, economic, social and legal aspects of forestry and sustainable forest management. The groups were charged with developing indicators for Sustainable Forest Management.
Waste	The Waste Management Act 1996 and amendments	Objectives include (amongst others) the more effective and environmentally sensitive management of wastes in Ireland.
	European Communities (Port Reception Facilities for Ship Generated Waste and Cargo Residues) Regulations 2003 (SI 117 of 2003)	Objective is to reduce the discharges of ship-generated waste and cargo residues into the sea, especially illegal discharges, from ships using ports in the Community, by improving the availability and use of port reception facilities for ship-generated waste and cargo residues, thereby enhancing the protection of the marine environment.
Cultural Heritage	National Heritage Plan 2002	Core objective is to protect our heritage. In this regard the "polluter pays" principle and the precautionary principles are operable.
	Framework and Principles for the protection of the archaeological heritage	Sets out archaeological policies and principles that should be applied by all bodies when undertaking or authorising development.
	Architectural Heritage Protection, Guidelines for Planning Authorities, 2004	Outlines policies for protection of Architectural Conservation Areas.



Topic	Title	Summary of Objectives
	National Inventory of Architectural Heritage (NIAH)	

#### 4.1.1 EU Environmental Plans and Other Guidance

EU Habitats Directive (92/43/EEC): The provisions of the Directive requires Member States to introduce a range of measures including the protection of species listed in the Annexes; and to undertake surveillance of habitats and species and produce a report every six years on the implementation of the Directive. The habitats listed in Annex 1 of the Directive and the species listed in Annex II, are to be protected by means of a network of sites and are afforded protection as Special Areas of Conservation (SACs). Special Areas of Conservation and Special Protection Areas (SPAs) classified under the EC Birds Directive, form a network of protected areas known as Natura 2000.

The EU Water Framework Directive (2000/60/EC) came into force in December 2000 and was written into Irish Law in 2003. The Directive clarifies, collects and updates previous pieces of water legislation and provides for water management on the basis of River Basin Districts. The Water Framework Directive (WFD) sets a framework for comprehensive management of water resources in the European Community, within a common approach and with common objectives, principles and basic measures. The WFD addresses inland surface waters, estuarine and coastal waters and groundwater. The fundamental objective of the WFD aims at maintaining "high status" of waters where it exists, preventing any deterioration in the existing status of waters and achieving at least "good status" in relation to all waters by 2015.

The main objectives of the WFD are to protect and enhance the status of all our waters, encourage sustainable water use, provide for sufficient supply of good quality surface water and groundwater, reduce or phase out discharges of dangerous substances to water, protect territorial and marine waters and to establish and maintain a register of "protected areas".

EU Birds Directive (79/409/EEC) 1979 seeks to protect, manage and regulate all bird species naturally living in the wild within the European territory of the Member States, including the eggs of these birds, their nests and their habitats and to regulate the exploitation of these species. Special Protection Areas (SPAs) for the protection of birds were established following the Birds Directive.

EU Urban Waste-Water Treatment Directive (91/271/EEC) 1991 seeks to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors and



concerns the collection, treatment and discharge of domestic waste-water, the mixture of waste-water, the mixture of waste-water and waste-water from certain industrial sectors.

EU Floods Directive was adopted on the 18<sup>th</sup> January 2006 when the European Commission proposed a directive on the assessment and management of floods. Its aim is to reduce and manage the risks that floods pose to human health, the environment, infrastructure and property.

The Groundwater Directive 80/68/EEC requires Member States to apply a system of investigation and authorisation to waste disposal and other activities in order to ensure that groundwater is not polluted by dangerous substances.

The Surface Water Directive 75/440/EEC aims to protect public health by ensuring that surface water abstracted for use as drinking water reaches certain standards before it is supplied to the public. The directive lays down nonbinding “guide” values and binding “imperative” values and requires Member States to monitor the quality of surface waters from which drinking water is abstracted and to take measures to ensure that it complies with the minimum quality standards. The Directive has been integrated into the proposed Water Framework Directive.

The Environmental Impact Assessment Directive 85/337/EEC (amended as Directive 97/11/EC), requires Member States to carry out environmental impact assessments (EIA) on certain public or private projects, before they are authorised, where it is believed that the projects are likely to have a significant impact on the environment. The EIA procedure is an integral part of the planning process and the public can provide input and express environmental concerns with regard to the project. The results of this consultation must be taken into account during the authorisation process.

The aim of the European Convention on Protection of the Archaeological Heritage 1992 is to “protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study”. The Convention provides the basic framework for policy on the protection of the archaeological heritage in Ireland. The obligations on the State under the Convention have been summarised by the Department of Arts, Heritage, Gaeltacht and the Islands and included the following:

- Providing for statutory protection measures, including the maintenance of an inventory of the archaeological heritage and the designation of protected monuments and areas;
- The authorisation and supervision of excavations and other archaeological activities;

- Providing measures for the physical protection of the archaeological heritage including acquisition or protection by other means;
- Providing for consultation between archaeologists and planners in relation to the drawing up of development plans and development schemes so as to ensure that full consideration is given to archaeological requirements.
- Facilitating the study of archaeological discoveries by making and bringing up to date surveys, inventories and maps of archaeological sites and taking practical measures to ensure the drafting, following archaeological operations, of a publishable scientific record before the publication of comprehensive studies;
- Educating the public in relation to the value of the archaeological heritage and the threats to it, promoting public access to important elements of this heritage, and encouraging public display of selected archaeological objects.

In particular the Macroom Development Plan is informed by the following plans at National and Regional Level.

#### **4.1.2 National Plans**

##### **National Development Plan 2007-2013**

The 2000 National Development Plan was prepared to underpin the development of a dynamic competitive economy to 2006. The subsequent NDP published this year will guide the development of the country in the period 2007-2013. The Plan sets out a strong framework for the promotion of regional development with a particular focus on investment in the National Spatial Strategy (NSS) Gateway centres. Strong urban centres are directly related to regional growth and development, affecting employment, incomes and quality of life throughout the regions.

The Plan has four basic objectives: to continue sustainable national economic and employment growth, to strengthen and improve Ireland's international competitiveness, to foster balanced regional development and to promote social inclusion. It is identified that the challenge for Cork is to accelerate growth and development.

The NDP is the largest and most ambitious investment plan ever drawn up for Ireland, where over €52 billion was invested between 2002-2006 and a predicted € 184 billion of Public, Private and EU funds will be invested between 2007 and 2013 in economic and social infrastructure, enterprise, science, agriculture sectors, education, training and environmental services.



The 2007 National Development Plan includes a number of strategic investment objectives for the southwest region including major road improvement schemes, waste management, enterprise, social infrastructure programmes etc.

### **The National Spatial Strategy, 2002-2020**

The National Spatial Strategy (NSS) is a twenty year planning framework which sets out a national context for spatial planning which informs regional planning guidelines, as well as county and city development plans and strategies. It aims to achieve more balanced regional development.

It is a planning framework designed to deliver a more balanced social, economic and physical development between the regions. The successful aspects of the growth of the Greater Dublin Area over recent years need to be emulated in other areas to deliver a more even distribution of successful economic development. The growing strengths of Cork, Limerick/Shannon, Galway, and Waterford suggest that a coordinated development of these cities has the potential to offer a counterweight to the pull of the Dublin Region.

According to the *NSS*, the best prospects for establishing critical mass of the type and scale capable of competing with that of the Greater Dublin Area are dependent on point to developing Cork, Galway, Limerick/Shannon and Waterford as an increasingly inter-connected and developed network of co-operating and complementary cities. Models for activating such polycentric development approaches are evolving in other European countries.

The strategic roles which cities, towns, villages, communities and rural areas will have in delivering a more spatially balanced Ireland can be summarised as follows:

- Consolidation- the Greater Dublin Area;
- Strengthening the South, South East, West and North West to complement Dublin;
- Revitalisation the West and South West;
- Reinforcing central parts of Ireland and the South East; and
- Co-operating in an all-island context.

The research carried out for the *NSS* into rural and urban trends and economic performance has identified certain areas primarily along the coast in parts of Cork, Kerry, Clare and Galway — that have been experiencing economic growth and revitalisation based on the diversification of an economy previously centred on agriculture. The new growth is linked to the recognition and development of economic potential

based on tourism, marine and natural resources and certain types of enterprise development. This is derived ultimately from outstanding natural settings and a quality of life that attracts people with a variety of skills. Certain medium sized towns are playing a particularly important role in attracting people and enterprise to these areas.

### **National Climate Change Strategy 2007-2012**

The National Climate Change Strategy 2007-2012 follows on from the first national strategy, published in 2000 and reviewed in 2002, and takes account of the public consultation process which followed the further review in Ireland's Pathway to Kyoto Compliance (2006). The purpose of this Strategy is to show clearly the measures by which Ireland will meet its 2008-2012 commitments; and to show how these measures position us for the post-2012 period, and to identify the areas in which further measures are being researched and developed to enable us meet our eventual 2020 commitment. Through innovation, energy efficiency and more sustainability in our personal choices, we can achieve the necessary lowering of the carbon intensity of our economy without sacrificing competitiveness, economic performance or quality of life.

### **National Biodiversity Plan 2002**

The National Biodiversity Plan 2002 comprises a set of 91 Actions to halt the current and continuing loss of plant species, as well as the vegetation and habitats they compose by the year 2010. The Plan pays special attention to the need for the integration of the conservation and sustainable use of biological diversity into all relevant sectors. The full and effective integration of biodiversity concerns into the development and implementation of other policies, legislation, and programmes is of crucial importance. The overall objective of the Plan is to secure the conservation, including where possible the enhancement, and sustainable use of biological diversity in Ireland and to contribute to conservation and sustainable use of biodiversity globally. The objectives of the National Biodiversity Plan include to;

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

### **Sustainable Development – A Strategy for Ireland 1997**

Sustainable Development – A Strategy for Ireland, published in 1997, stresses the Government's commitment to sustainable forms of transport and the need to strengthen and improve such forms in the interests of the promotion of sustainable development. An emphasis is given to the need to produce an



efficient, cost effective and customer focused development of the rail network. The Strategy reflects Ireland's commitment to the principles and agenda for sustainable development agreed at the Earth Summit in Rio de Janeiro in 1992 and also responds to the EU Fifth Action Programme for the Environment.

The general aim of the Strategy is to *"ensure that economy and society in Ireland can develop to their full potential within a well protected environment, without compromising the quality of that environment and with responsibility towards present and future generations and the wider international community"*.

To achieve the aims of the Strategy, the Government has adopted the following principles, the implementation of these being specific objectives of this Plan:

- The Precautionary Principle which aims to deal with causes rather than results of environmental pollution; and
- Integration: illustrates the importance of integration at all levels of society – government, sectoral and policy levels, to enable environmental concerns to be addressed in an effective and comprehensive manner.
- The Polluter Pays Principle, which allocates the costs of pollution to producers and consumers rather than to society at large.

The Strategy recognises that the primary responsibility for the proper management of hazardous waste lies with the holder or generator of the waste. Other international policies/legislation that should be adhered to include:

- European Union (EU) Habitats Directive (92/43/EEC) 1992;
- EU Water Framework Directive (2000/60/EC);
- European Landscape;
- Birds Directive;
- Air Framework Directive;
- Waste Framework Directive; and
- Phosphorous Regulations.

### **National Heritage Plan 2002**

The National Heritage Plan 2002 sets out a clear and coherent strategy and framework for the protection and enhancement of our heritage over the next five years. The concept of "placing heritage at the heart of public life" is intended to be all-embracing and to encompass the actions of individuals, communities, the private sector, non-governmental organisations, and regional and local bodies – all or which have a critical role to play in the protection and promotion of our heritage. The priorities for the National Heritage Plan include the following key actions:

- Local Heritage Plans, supported by enhanced levels of heritage expertise within Local Authorities;
- Increased levels of assistance for the protection of the archaeological and architectural heritage;
- Implementation of the National Biodiversity Plan and addressing the conservation of habitats, species, genetic diversity and the natural heritage;
- Initiation of a heritage inventory programme and establishment of a central heritage archive and library;
- Establishment of new structures in Dúchas, the Heritage Service of the Department of Arts, Heritage, Gaeltacht and the Islands, to provide a more efficient, integrated and regionalised service;
- Provision of total additional financial allocations of €123.16 m (£97 m) on a phased basis over the life of the Plan; and
- The deployment of a total of 102 additional staff to enhance existing heritage programmes and to operate the new structures proposed in the Plan.

### **The Energy White Paper – Delivering a Sustainable Future for Ireland**

The White Paper entitled "Delivering a Sustainable Future for Ireland" is an action based strategy for achieving specific energy targets for Ireland in a timeframe between 2007 and 2020. The White Paper sets out strategic goals for the security of energy supply, sustainability and competitiveness. The main provisions of the White Paper are:

- Sustainable transport action plan due late 2007 will consider 100% plant oil in captive fleets in Local Authorities;
- Public sector will lead the way in bio-energy heating, electricity, CHP and biofuels;
- Electricity demand site management will be addressed this year and there are plans to install smart metering for all new and existing housing stock.
- Review part L (Conservation of fuel and energy) of building regulations in 2008 to reduce energy demand by 40% relative to current standards, look for funding mechanisms for smart metering, set target of 33% energy saving across public sector, introduce energy efficiency programmes (targets and standards) for LA's, publish green public procurement action plan, update existing social housing design guidelines; and
- Allocate significant amounts of resources towards remedial works Scheme and LA major refurbishment works.

### **Transport 21**

In 2005 the Government launched Transport 21, a capital investment framework through which the transport system in Ireland will be developed, over the period 2006 to 2015. This framework includes for the



development of the N15/N17/N18/N20/N25 Atlantic Corridor from Letterkenny to Waterford via Sligo, Tuam, Ennis, Limerick, Mallow and Cork. The road for the Atlantic Corridor is to be dual carriageway or 2+1. The current NRA policy is that 2+1 should only be used in retrofit situations therefore the cross section for new build sections of the Atlantic Corridor will be dual carriageway.

The scheme objectives are set out in Transport 21 as part of the strategy for National Roads as follows:

*“Transport 21 is the capital investment framework through which the transport system in Ireland will be developed, over the period 2006 to 2015. This framework will address the twin challenges of past investment backlogs and continuing growth in transport demand. The projects and programmes that make up Transport 21 will aim to:*

- *increase accessibility;*
- *ensure sustainability;*
- *expand capacity;*
- *increase use; and*
- *enhance quality.*

#### **Towards Sustainable Local Communities: Guidelines on Local Agenda 21, 2001**

Local Agenda 21 was the result of the first UN Conference on the Environment and Development (Earth Summit) in Rio de Janeiro in 1992, where Ireland was amongst 150 nations, which endorsed Agenda 21, a major blueprint for how the world's nations can work individually and collectively towards sustainable development by the 21<sup>st</sup> century. Local Agenda 21 and the EU's Fifth Environment Action Programme underlined the fact that traditional policies must be replaced by an integrated approach to environment and development issues, if growth is to be achieved in parallel with, rather than at the expense of, environmental quality.

Local Agenda 21 is intended to translate sustainable development principles and objectives into practical action at the local level. Some of the major aims of Agenda 21 include:

- Reducing the amount of energy and raw materials society consumes, as well as the pollution and waste it produces;
- Protecting fragile ecosystems and environments; and
- Bringing about a fairer distribution of wealth, both between countries and between different social groups within countries.

Local Agenda 21 also encourages consultative processes which involve the whole community, its elected members and other community and representative groups through means of information awareness, public

consultation and feedback, partnerships between authorities, businesses and communities, and a continuing monitoring of progress towards sustainability. The principles of Agenda 21 are being met through the process of SEA..

### **EU Sixth Environment Action Programme, 2002-2012**

The EU Sixth Environment Action Programme sets out objectives in the shape of Europe's future environment at the start of the 21st century. It provides a framework for adopting and implementing sustainable development policies in Europe. This vision "Environment 2010: Our Future, Our Choice" seeks the following aims:

- To decouple the generation of waste from economic growth by establishing more sustainable consumption patterns;
- For waste generated, these should represent very low risks to the environment and our health;
- We should maximise recycling and bring "final disposal to an absolute minimum"; and
- Waste should be treated as close as possible to where it is generated ("proximity principle").

Seven 'Thematic Strategies' were introduced as a way to tackle seven key environmental issues, which require a holistic approach because of: their complexity, the diversity of actors concerned and the need to find multiple and innovative solutions. The Seven Thematic Strategies are:

- Clean Air For Europe (CAFE);
- Soil protection;
- Sustainable use of pesticides;
- Protect and conserve the marine environment;
- Waste prevention and recycling;
- Sustainable use of natural resources; and
- Urban environment.



**Retail Planning Guidelines for Planning Authorities, 2005**

Published in January 2005 the *Retail Planning Guidelines for Planning Authorities* provide a comprehensive framework to guide local authorities in preparing development plans and assessing applications for planning permission as well as retailers and developers in formulating development proposals.

These guidelines are a revision of the 2001 guidelines insofar as with relation to retail warehousing. It was recognised that there is evidence of consumer demand in Ireland for large-scale retail warehousing units which are capable of displaying a very wide range of goods within one store. Accordingly, the Minister has determined that the 6,000sqm floorspace cap on individual retail warehouses will not apply in those areas which are subject to Integrated Area Plans under the Urban Renewal Act, 1998 in National Spatial Strategy, Gateways of Athlone/Tullamore/Mullingar, Cork, Dublin, Dundalk, Galway, Letterkenny, Limerick/Shannon, Sligo and Waterford and within the functional areas of the four Dublin local authorities.

**Residential Density Guidelines for Planning Authorities, 1999**

These Guidelines promote increased residential densities in order to ensure the most efficient use of zoned and serviced housing land, provide a more varied range of dwelling types and sizes, optimise the use of existing services, facilities and infrastructure, encourage more sustainable commuting patterns and facilitate improved public transport. It is considered that the settlement strategy proposed in the variation reflects those in the Guidelines.

**Guidelines for Planning Authorities: Architectural Heritage Protection, 2004**

The Planning and Development Act 2000, required additional development objectives relating to the protection of structures which are deemed to be of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and to preserve the character of architectural conservation areas.

In this context, these Guidelines aim to assist local authorities/town councils in the adoption of suitable policies for protecting architectural heritage in their development plans and to ensure they have practical effect through development control measures. The guidelines aim to assist planning authorities in their role to protect the architectural heritage of their area. The Macroom Development Plan is considered to be consistent with these Guidelines.

### 4.1.3 Regional Plans

#### **Regional Planning Guidelines for the Southwest Region, 2004**

The Regional Planning Guidelines for the Southwest provide a broad canvas, which aims to steer the growth and prosperity of the region and its people, up to 2020. The Guidelines contain statements and analysis of key economic objectives, together with a set of planning guidelines to be incorporated in the statutory development plans of the local authorities in the region and are seen as an important link between NSS and the draft of local county and city development plans.

The guidelines project that the population of the Southwest will grow to a range between 670,000 and 700,000 by 2020. Macroom has been identified as one of the key service towns with a population between 1,500 and 5,000 that can perform an important role in driving the development of the overall region and is therefore targeted for growth.

The regional planning guidelines for the southwest note that towns such as Macroom are key local service centres and envisage that growth in towns such as Macroom will be employment-led and that they will not merely become dormitory towns for the Metropolitan Area. Commuting to the Gateway will obviously continue, but should not become the prime basis of growth.

In order to achieve a more balanced growth throughout the County, a number of strategic links are identified between towns with Macroom having a pivotal role in linking North West Cork with South West Cork. Building on the Cork-Macroom-Killarney route as a potential development corridor, with Macroom having capacity to have an industrial focus, and then developing links between West and North of the area;

#### **South Western River Basin District (SWRBD)**

The South Western River Basin District (SWRBD) "A Future for Our Waters" and "Water Matters" outlines the requirements of the EU Water Framework Directive, and detail the main issues of investigation to date. These include wastewater and industrial discharges, landfills, quarries, mines and contaminated lands, agriculture, wastewater from unsewered properties, forestry, usage and discharge of dangerous substances, physical modifications, abstractions and local issues. The booklet "Water Matters" also outlines the next steps in the process of preparing a River Basin Management Plan, which is due to be adopted in 2009. The document "A Future for Our Waters" indicates the findings of Risk Assessments that have been carried out on water bodies within the SWRBD.



#### 4.1.4 Local Plans

##### **Cork County Waste Management Plan 2004-2009**

The Waste Management Plan was formulated by Cork County Council to address the on-going challenge of waste management in County Cork. The Plan addresses all areas of waste management – from waste prevention and minimisation, to its collection, treatment, recovery and final disposal. The Plan is guided by international, EU and Irish legislation and policy on waste management.

The Waste Management Plan for County Cork envisages a single, central regional landfill to accept residual waste. National recycling targets for household wastes will be met by provision of a high number of civic amenity and bring sites, combined with a central integrated materials recovery and composting facility to segregate and recover recyclable and biodegradable household wastes. Thermal treatment will be retained as an option, should waste growth necessitate its introduction at a later date.

The previous Waste Management Plan (1999 to 2004) confirmed the decision to proceed on the basis of Scenario 2 of the Waste Management Strategy, which resulted in a number of actions being taken by the Council including:

- Bottlehill identified as the most suitable site for a landfill.
- Application to the Environmental Protection Agency for a waste management licence and to An Bord Pleanála for approval. The EPA issued a proposed decision to grant a licence and a decision is currently awaited. An Bord Pleanála granted approval in February 2004.
- Progress on the acquisition of sites for the provision of materials recovery and residual landfill facilities.
- Entering into tender negotiations for the provision of a materials recovery facility by public private partnership.
- Progress in the provision of civic amenity sites and transfer stations.

Having regard to the above, the Council proposes to continue to implement scenario 2 for the management of municipal waste in the county until 2009.

##### **Cork Strategic Retail Study 2008**

The Cork Strategic Retail Study (CSRS) outlines that Macroom serves a well defined catchment and that the town should improve its town centre retail function by increasing the range and quantum of retail floorspace. There are opportunities in the town to provide new comparison and retail warehouse development.

Section 2.45 of the strategy outlines that the ring towns (Bandon, Fermoy, Kinsale, Macroom, Mallow, Youghal) have greater independence from the City centre and serve well-defined catchments. The

Development Plan seeks to maintain their attractiveness as self-sufficient towns by developing the range and quality of retail development, particularly in their town centres.

The strategy notes that Macroom town centre supports 3,940m<sup>2</sup> of comparison goods floorspace and 4,795m<sup>2</sup> of convenience goods floorspace. Retail provision has been improved since 2002 by the provision of a new Dunnes store, a Lidl and an out-of-centre 4 Home store. There continues to be some loss of expenditure from the town. However the strategy notes that there are further development opportunities including an opportunity for retail warehousing on the Neville site within the town.

#### **Cork County Heritage Plan 2005 - 2010**

The Cork County Heritage Plan aims to secure benefits for local heritage and to increase awareness, appreciation and enjoyment of this heritage for all of the people in County Cork. It aims to develop and encourage best practice in relation to the management and care of heritage in County Cork and to deliver practical actions to achieve this, as well as to gather and disseminate information about heritage in the County.

#### **Joint Housing Strategy**

Cork County Council, in conjunction with Cork Corporation and the nine Urban District Councils in the county produced a Joint Housing Strategy to address the housing needs of the existing and future population of Cork to 2011. The policies and objectives of the strategy are enshrined in the Cork County Development Plan 2003 (as amended).

#### **Cork Area Strategic Plan 2001 - 2020**

The Cork Area Strategic Plan (CASP) provides a vision and strategy for the development of the Cork region up to 2020. The strategy is currently under review to take account of population and economic growth since the 2001 strategy, however population projects have not been updated for Macroom in the CASP review, however an additional 500 jobs are proposed for the area as outlined in the updated strategy.

CASP promotes sustainable forms of spatial development for the Cork area by creating a sustainable mixture of land uses with efficient transport so that movement growth is facilitated and optimised. It also promotes the reduction of peripherality by creation of multi-modal movement corridors and enhancement and the enhancement of 'gateway' functions.

The expansion of Macroom will necessitate wise use of building land and higher densities than in other comparable settlements, due to the topographical restrictions and in order to maintain the attractive architectural character of the town. Growth and development of Macroom is particularly important in the context of its pivotal point between the rural areas of North and West Cork. Nevertheless any growth will



need to be carefully planned given local environmental constraints, cultural heritage and the cost of supplying services, and will need to be well integrated with plans for the proposed bypass.

*CASP* states that Macroom should be able to achieve a sizeable growth as a prestige service centre for the Gaeltacht area, particularly once the town is bypassed. The subject development is therefore compliant with the objectives of *CASP*, as it will improve Macroom's facilities as a service centre, and make the most efficient use of land within the town centre thus promoting sustainable growth.

### **Cork County Development Plan 2009**

The *Cork County Development Plan (CDP)* was adopted by the Members of Cork County Council on 9th January 2009 and formally came into operation on the 6th February 2009.

Planning policy in the County Development Plan advocates the concentration of development in locations where it is possible to integrate employment, community services, retailing and public transport in conjunction with population growth.

Planning policy SET 1 - 6 in the County Development Plan 2009 sets out that it is an objective of the Plan to promote Macroom's growth as a district employment centre by increasing the range of employment opportunities, to support the continued redevelopment of brownfield lands within the town centre in the Macroom Town Plan, and to promote its strategic location both within the County and within the south-west region.

Section 5.2.3 of the Plan sets out that outside of Metropolitan Cork, Macroom, Fermoy and Skibbereen have recorded the highest rate of growth in employment.

The *CDP* notes that it is important for these strategic towns such as Macroom to retain a sufficient critical mass of population in order to attract new investment and employment and develop and modernise the range of services and facilities that they offer. In order to establish an appropriate balance in the spatial distribution of growth, these centres will provide additional employment for the population expected in the towns as well as providing an improved service for the large rural hinterlands in the area.

It is also an infrastructural objective to seek the support of the National Roads Authority in the implementation of the N22 (Ballincollig – Macroom – Ballyvourney).

Section 7.1.10 of the CDP 2009 sets out that in terms of the natural environment the Gearagh near Macroom on the River Lee is a site of international importance where the most extensive alluvial woodland in Western Europe is found. This unusual area has probably been wooded since the end of the last Ice Age and frequent flooding has served to enhance its character. The site is important for wintering waterfowl including Whooper Swans, Wigeon, Teal, Tufted Duck and Golden Plover.

**North and West Cork Strategic Plan 2002 to 2020**

The North and West Cork Strategic Plan outlines that in terms of expanding the Productive Potential of the Economy of North and West Cork it is proposed that steps should be undertaken to strengthen the Cork / Macroom / Killarney route as a potential development corridor. It is considered that Macroom has the capacity to act as a pivotal focus for industrial development and for providing linkage between the West and the North of the Area.

**Macroom Electoral Area Local Area Plan 2005**

The Macroom Electoral Area Local Area Plan governs the environs of Macroom and surrounding lands. In this Local Area Plan, Macroom is identified as a Main Settlement within the Macroom Electoral Area, while retaining its status as a ring town in the overall strategy of the Cork County Development Plan 2003 (as varied), as detailed in Chapter 2, Volume 1 of that Plan. The strategic aims for Macroom seek to promote the town as an important growth/development location, particularly as a strategic link between the northwest and southwest of the county.

Within this plan, lands outside the town boundary to the south and southeast is zoned mainly for Industry, with some established commercial and residential uses. A small area of land to the west of the town is zoned for new and established residential uses and open space. While to the north west of the town a small area of land is zoned for new and established industrial uses.

The plan notes that the bulk of the area of the town is located within the boundary of the Town Council. For the most part the zoning map for Macroom Environs is concerned with confirming the zoning of areas previously zoned in past plans and adding minor extensions where this is appropriate.



## 5 EXISTING ENVIRONMENT

### 5.1 INTRODUCTION

This section of the report describes the current state of the environment in the Macroom Development Plan area as an entire site. Sections 5.2 to 5.10 below describe the baseline conditions for each topic. As set out in the SEA guidelines (e.g. Population, Material Assets etc) are fully addressed in accordance with the SEA Guidelines. Figure 5.1a presents the boundary of the study area subject to this SEA.

In accordance with the SEA guidelines no primary research was carried out in the collection of data. Existing and available information sources were used. These include the following:-

- Central Statistics Office;
- National Parks and Wildlife Service data base;
- Planning and Policy documents;
- Geological Survey of Ireland;
- South Western Regional Fisheries Board
- The Environmental Protection Agency; and
- Ordnance Survey of Ireland.

Baseline data was collected relating to the indicators described in the SEA directive: biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship between these factors.

## 5.2 BIODIVERSITY, FLORA AND FAUNA

### 5.2.1 Existing Policies

The Macroom Plan 2009-2015 contains policies and objectives to protect and enhance the natural environment of Macroom town. These policies stress the ecological importance of areas such as the River Sullane and the Gearagh. Additional measures have been proposed in this report (See section 5.1.7) to add further protection to biodiversity, flora and fauna within Macroom town.

### 5.2.2 Baseline

“Biological diversity” refers to the variety of living things. In the same way as a rich diversity of cultures enhances the quality of our lives, so does a rich diversity of plants and animals. Biological diversity is known to be important to the proper functioning of the planet’s life support system. Conservation of biological diversity has, therefore, become one of the keys aims of governments throughout the world.

A number of designated sites are present in the vicinity of the town. A section of the Gearagh proposed Natural Heritage Area (pNHA) and candidate Special Area of Conservation (cSAC) lies within Macroom town boundary (see section 5.1.2.3 for description of terms). The Gearagh is a unique site as it is the largest area of alluvial woodland in Europe west of the Rhine. This habitat (Residual Alluvial Forest (91EO)) is listed, with priority status, on Annex I of the E.U. Habitats Directive (NPWS, 2008).

#### Flora of Macroom

Macroom town lies within Ordnance Survey National Grid 10km square W37. Both the NPWS Rare Plants Database and the *New Atlas of British and Irish Flora* (Preston *et. al.* 2002) have recorded protected flora species from this 10km square.

A plant species list for 10km square W37 was generated from the CD-Rom version of (Preston *et. al.*, 2002). This list was then compared to the lists of species protected under the Flora (Protection) Order of 1999; and those included in the Irish Red Data Book (Curtis and McGough, 1988). Table 5.2.1 shows rare and protected plant species found within 10km squares W37.



Table 5.2.1: Rare or Protected Plant Species recorded by Preston *et. al.* (2002 ) from 10km square

Species	Status within 10km square W34	Notes
Bird Cherry ( <i>Prunus padus</i> L.)	1987-1999	IUCN = not threatened. IRDB TN = 6 (Rare).
Bitter-vetch ( <i>Vicia orobus</i> L.)	1987-1999	IUCN = Vulnerable IRDB TN = 11 (Vulnerable) RI Protected Species Flora Protection Order Species
Heath Cudweed ( <i>Omalotheca sylvatica</i> L.)	Pre 1970	IUCN = Rare IRDB TN = 8 (Rare) RI Protected Species Flora Protection Order Species
Mudwort ( <i>Limosella aquatica</i> L.)	1987-1999	IUCN = Rare IRDB TN = 5 (Rare) RI Protected Species Flora Protection Order Species
Round-leaved Crane's-bill ( <i>Geranium rotundifolium</i> L.)	1987-1999	IUCN = Vulnerable IRDB TN = 10 (Vulnerable)

Bird Cherry is a shrub or small tree of woods, stream sides and damp rocky places. It has been recorded recently in Co. Cork (Curtis and McGough 1988), and is known from the Gearagh (see table 5.2.1).

Bitter-vetch is recorded by Preston *et. al.* (2000), as being present within the 10km square W37 (1987-1999). Webb *et. al.*, (1996) describe its occurrence in *Thickets and rocky ground in the West, Centre and North-east rather rare.*

Heath Cudweed occurs in 'upland pastures and damp, sandy places' (Webb *et. al.* 1996). It has not recently been recorded on Co. Cork (Curtis and McGough 1988). It is considered unlikely that this species occurs within the study area.

Mudwort which is recorded by Preston *et. al.* (2000), as being present in the 10km square W37 (1987-1999). Webb *et. al.*, (1996) describe the occurrence of this plant in *small pools, or on wet mud on the margins of lakes; only in the west half (Cork to Fermanagh) and very local.*

The Irish Red Data Book: 1 Vascular Plants (Curtis and McGough 1988) reports that Mudwort has:

'...recently being (*sic.*) found to occur in large swards on the exposed bed of a reservoir near Macroom in County Cork. Here the Mudwort is the dominant species in a predominantly annual vegetation over several square kilometres of reservoir bed'.

Mudwort has been recorded in 1984 within the Gearagh (See table 5.2.2). Given the apparent abundance of the species in this area, there is the potential that Mudwort may grow within Macroom town boundary. The presence of a significant population of this species would be of National Importance.

Round-leaved Cranesbill has an uncertain distribution in Ireland due to difficulties with its identification. Curtis and McGough (1988) report that its distribution is centred on Co. Cork. It is found in hedgerows, on walls and on roadsides as an opportunistic casual (Curtis and McGough, 1988).

**Table 5.2.2: Rare or Protected Plant Species recorded by NPWS, (2008) from 10km squares W37**

Species	Details of last record	Protection
Mudwort ( <i>Limosella aquatica</i> L.)	Recorded in 1984 at the Gearagh	IUCN = Rare IRDB TN = 5 (Rare) RI Protected Species Flora protection Order Species

### Fauna of Macroom

Most of Ireland's native terrestrial mammal species have been recorded within the study area. Species recorded include, otter, Irish hare, pine marten, Irish stoat, red squirrel, pygmy shrew, hedgehog, badger and bat species; Daubenton's bat, which is listed on Annex II of the EU Habitats Directive, as well as both the common and soprano pipistrelle species. A full list of protected fauna species recorded by Hayden and Harrington (2000) is included in table 5.2.1.

The Gearagh cSAC and pNHA supports an important wintering bird population including: Whooper Swan, Wigeon, Teal, Mallard and Tufted Duck. Golden Plover utilise the site on occasions, while there is a regular flock of Dunlin a species unusual at inland sites. A late summering flock of Mute Swan has also been recorded within the site. Great Crested Grebe and Tufted Duck breed in small numbers within the Gearagh (NPWS, 2008).

Table 5.2.3 shows bird species of conservation concern recorded by Gibbons *et. al.* (1993) as breeding within OS 10km grid square W37, within which the site is located. Species considered here to be of high conservation concern are those listed either on the 'Red List' by Lynas *et. al.* (2007), as being of high conservation concern in Ireland; those listed in the Irish Red Data Book (RDB) (Whilde, 1993) or those listed under Appendix 1 of the EU 'Birds Directive'.



**Table 5.2.3 Selected bird species (those of high conservation concern) recorded from 10km National Grid Squares W37 during the ‘New Atlas Survey’ 1988-91 (Gibbons *et. al.*, 1993).**

Species	Breeding status within 10km square W37	Notes
Kingfisher	Confirmed breeding	Annex I Birds Directive Amber List Birdwatch Ireland
Merlin	Confirmed breeding	Annex I Birds Directive
Lapwing	Confirmed breeding	Red List Birdwatch Ireland (Lynas <i>et al.</i> , 2007)
Black Headed Gull	Confirmed breeding	Red List Birdwatch Ireland (Lynas <i>et al.</i> , 2007)

Kingfisher requires relatively shallow and slow moving freshwater, with thriving populations of small fish on which to feed, and vertical banks of fairly soft material where they can excavate their nesting burrows (Gibbons *et. al.*, 1993). There is potential for Kingfisher to breed on the Sullane and Laney Rivers.

Merlin breeds on heath and moorland and winter on lower ground, and at the coast (Gibbons *et. al.*, 1993). In Ireland nesting in conifer woodland is widespread, as this habitat is often overlooked by other raptors (birds of prey) (Gibbons *et. al.*, 1993). The conifer woodlands of Coolyhane to the north east, Carriganine and Lackaduff to the southwest all offer potential habitat for Merlin within, and in close proximity, to the town boundaries.

Lapwing are found in agricultural land and tend to favour farmlands with a diversity of crops. They prefer to nest in fields cultivated in the spring and in particular those that are near grass. Fields which offer both bare ground and grass are considered the best habitat for rearing chicks (Gibbons *et. al.*, 1993). The agricultural land on the edge of Macroom town boundary offers potential habitat for Lapwing. However, it is considered very unlikely that this rapidly declining species nests in the vicinity other than perhaps at The Gearagh.

Black-headed Gull breeds colonially at sites ranging from coastal saltmarshes and sand dunes to freshwater lakes, marshes, gravel pits and upland tarns. Those that breed on the coast may feed inland to a great extent (Gibbons *et. al.*, 1993). No colonies of this species occur in the immediate vicinity of Macroom.

It is likely that common frog and probable smooth newt may utilise wet areas such as drains, ponds, etc. within the study area. There is no record of Viviparous Lizard from 10km square W37 (Marnell, 2002). This was however not a comprehensive survey, and it is considered likely that this species occurs in the area.



There are no recent records of the Habitats Directive Annex II butterfly species marsh fritillary in OS 10km National Grid square W37 (Asher *et. al.* 2001). It is considered unlikely that this species occurs within the study area.

None of the three species of Vertigo snails (*V. geyeri*, *V. angustior* and *V. moulinsiana*) that are listed under Annex II of the EU Habitats Directive are known to occur in the Lee catchment (Kerney, 1999).

The range of habitats within the study area is high, and it is likely that this is reflected in a diverse invertebrate fauna. There is no published data to suggest, however, that the invertebrate fauna of the study area is other than typical of a lowland location in southwest Ireland.

### Sites of international importance

#### Ramsar Sites

Ramsar sites are internationally important wetlands where water is the primary controlling environmental factor. The official title is The Convention on Wetlands of International Importance, especially as Waterfowl Habitat. The convention was developed and adopted by participating nations at a meeting in Ramsar, Iran on February 2, 1971 and came into force on December 21, 1975. The Gearagh an area designated as a Ramsar site lies within 10km of the study area.

#### Natura 2000 Sites

The Natura 2000 Network is a network of important ecological sites across the European Union. It is comprised of areas known as Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) (see below). The total land and freshwater area within the Natura network in Ireland is some 11,644km<sup>2</sup>: this includes some 2,300km<sup>2</sup> of designated marine areas. Whilst the designation of an area as a Natura 2000 site greatly restricts development, the designation does not necessarily mean limitation of activities within the site or surrounding area provided these activities are environmentally sensitive and do not impact negatively upon the habitats, or species for the protection of which the site has been designated.

Candidate Special Areas of Conservation (cSACs): are protected under the European Union (EU) 'Habitats Directive' (92/43/EEC), as implemented in Ireland by the European Communities (Natural Habitats) Regulations, 1997. There is just one cSAC situated within 10km of the study area, namely *The Gearagh* cSAC (Site Code: 000108). See Table 5.2.4 for the key features of this designated site.

Special Protection Areas (SPAs): were initially designated under Directive 79/409/EEC, The Directive on the Conservation of Wild Birds ('The Birds Directive'), and are now protected as Natura 2000 Sites under the EU 'Habitats Directive'. There are two SPAs within 10km of the study area, namely *The Gearagh* (Site Code: 004109) and *Mullaghanish to Musheramore Mountains* (Site Code: 004162). See Table 5.2.4 for the key features of these designated sites.



### Sites of National Importance

Sites of national importance in the Republic of Ireland are termed, proposed Natural Heritage Areas (pNHAs). While the Wildlife (Amendment) Act (2000) has been passed into law, pNHAs will not have legal backing until the consultative process with landowners has been completed; this process is currently underway. There are five pNHAs within 10km of the study area, *The Gearagh* pNHA (Site Code: 000108), *Glashgarriff River* pNHA (Site Code: 001055), *Lough Gal* pNHA (Site Code: 001067), *Prohus Wood* pNHA (Site Code: 001248), *Boylegrove Wood* pNHA (Site Code: 001854). Table 5.2.4 gives details of the key ecological features of these sites, and also gives their distances and directions from Macroom town.

**Table 5.2.4: Designated sites within 10km of Macroom and the key ecological features of the sites**

Name	Site Code	Key Features	Distance (and direction) from the Macroom
Mullaghanish to Musheramore Mountains SPA	004162	The site consists of a variety of upland habitats, though approximately one-third is afforested. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier. A survey in 2005 resulted in 5 confirmed breeding pairs, which represents over 3% of the national total. A similar number had been recorded in the 1998-2000 period. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the Birds Directive. The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. The site also supports a breeding population of Merlin, a species that is also listed on Annex I of the E.U. Birds Directive. The principal tree species present are Sitka Spruce ( <i>Picea sitchensis</i> ) and Lodgepole Pine ( <i>Pinus contorta</i> ). Almost one-third of the site is unplanted blanket bog and heath, with both wet and dry heaths present.	5km northwest of Macroom
The Gearagh SPA	004109	The Gearagh SPA is a unique site due to the presence of remnants of one of the largest stands of alluvial woodland in Ireland or Britain. This habitat is listed, with priority status, on Annex I of the E.U. Habitats Directive. The reservoir created by the past damming activities now attracts important populations of wintering waterfowl, with six species occurring in populations of	1.7km southwest of Macroom

		national importance, Mute Swan, Wigeon, Teal, Shoveler, Coot and Golden Plover. Whooper Swan and Golden Plover, are listed on Annex I of the E.U. Birds Directive.	
The Gearagh cSAC and pNHA	000108	The Gearagh holds the only extensive alluvial woodland in Ireland or Britain, or indeed Western Europe west of the Rhine. For this reason it is a unique site and has been designated as a Statutory Nature Reserve. The international importance of the site is recognised by its designation both as a Ramsar site and as a Biogenetic Reserve. The reservoir is also a Wildfowl Sanctuary. Plants species of particular interest within the woodland are Wood Club-rush ( <i>Scirpus sylvaticus</i> ), Bird Cherry ( <i>Prunus padus</i> ) and Buckthorn ( <i>Rhamnus catharticus</i> ). Extensive swards of Mudwort ( <i>Limosella aquatica</i> ), a Rare plant listed in the Red Data Book, and protected under the Flora Protection Order occur on the mudflats along the reservoir. Otter, an Annex II species on the European Habitats Directive, is frequent throughout the site. The Gearagh supports part of an important wintering bird population including: Whooper Swans, Wigeon, Teal, Mallard and Tufted Duck. Golden Plover utilise the site on occasions, while there is a regular flock of Dunlin a species unusual at inland sites. A late summering flock of Mute Swan have also been recorded within the site. Great Crested Grebe and Tufted Duck breed in small numbers.	1km south of Macroom
Glashgarriff River pNHA	001055	This site includes one of the few waterfalls in the county. The waterfall was once a site for the Flora (Protection) Order (1999) and Habitats Directive Annex II species Killarney Fern ( <i>Trichomanes speciosum</i> ) in the last century but it has now disappeared. The flora of ferns and non-flowering plants in the glen are of interest. The presence of two protected mammal species, otter ( <i>Lutra lutra</i> ) and badger ( <i>Meles meles</i> ) adds further importance to the site.	7.5km Northeast of Macroom
Lough Gal pNHA	001067	Lough Gal (site code 1067) is a small lake now largely grown over by the fen at Curraghindaveagh. The plant communities include floating fen with some peat development especially in the south-west corner.	4.9km Northeast of Macroom



		Marshwort ( <i>Apium inundatum</i> ) and several pondweeds ( <i>Potamogeton</i> sp.) occur on the lake.	
Prohus Wood pNHA	001248	Prohus Wood consists predominantly of young trees, partly coppiced growing on rocky ground which slopes to the east. Birch ( <i>Betula</i> sp.), Oak ( <i>Quercus</i> sp.) and Holly ( <i>Ilex aquifolium</i> ) are frequent, with some Willows ( <i>Salix</i> sp.) and Alder ( <i>Alnus glutinosa</i> ) beside streams. At the lower edge thickets of Blackthorn ( <i>Prunus spinosa</i> ) and Hawthorn ( <i>Crateagus monogyna</i> ) occur with some Hazel ( <i>Corylus avellana</i> ). Pockets of clayey soil alternate with mossy boulders and support such plants as Common Dog-violet ( <i>Viola riviniana</i> ), Stitchwort ( <i>Stellaria holostea</i> ), Bugle ( <i>Ajuga reptans</i> ) and Wood Sanicle ( <i>Sanicula europaea</i> ). In wetter places Opposite-leaved Golden-Saxifrage ( <i>Chrysosplenium oppositifolium</i> ) and the moss <i>Mnium punctatum</i> are characteristic. The site has not developed much habitat diversity but is developing quite naturally and is of local importance.	6.6km west of Macroom
Boylegrove Wood pNHA	001854	Locally important deciduous woodland of mainly Oak ( <i>Quercus petraea</i> ) and Birch ( <i>Betula pubescens</i> ). The wood is part of an old estate attached to Boylegrove House. The ranger report (1993) notes that the wood is intact and infrequently grazed, mainly by cattle; there is also some dumping and littering activity occurring in the wood but it is not thought to be seriously damaging the wood. They also note a small area of clear felling in the north east of the site, where there is wet grassland with some scrub woodland of Birch with Bramble ( <i>Rubus fruticosus</i> ) and Foxglove ( <i>Digitalis purpurea</i> ) The felling is thought to have occurred some 20 years ago.	6.65km south west of Macroom

### Shadow Sites

Within 10km of Macroom there are two sites included in the *NGO Special Areas of Conservation Shadow List* (Dwyer, 2000). The Shadow List has been compiled by a grouping of Irish conservation Non-Government Organisations (NGOs), and includes sites, which, according to the NGOs, fulfil the ecological requirements for SAC designation. The two shadow sites found within 10km of the study area are described below in Table 5.2.5. None are located within Macroom town boundary.

**Table 5.2.5: Sites within 10km of the study area that are included in the NGO Special Areas of Conservation Shadow List (Dwyer, 2000).**

Site Name	Annex II Species present	Distance (and direction) from Macroom
River Lee	(1106) Atlantic Salmon	1km south of Macroom
Dunisky Souterrin, Macroom	(1330) Lesser horseshoe bat	4.5km southeast of Macroom

### Statutory Nature Reserves

The Gearagh is designated as a Statutory Nature Reserve under the Wildlife Act of 1976. Statutory Nature Reserves are regarded as the most rigorous mechanism in Ireland for the protection of ecosystems and species of flora and fauna, and almost all damaging activity can be legally prevented in Nature Reserves (Hickie 1997).

### Wildlife Sanctuaries

*The Gearagh and Inishcarra Reservoir* are designated as a Wildlife Sanctuary under the Wildlife Act of 1976; the precise boundaries of the Wildfowl Sanctuary are not however available. Wildlife Sanctuaries protect certain species of ducks, geese and waders from hunting. However, the boundaries are usually a compromise and are drawn up under consultation with local gun clubs and landowners. Whilst affording a degree of protection to wildfowl, which learn quickly the location of areas safe from shooting, this designation has little significance in planning and development and is not normally recognised by local authorities (Hickie 1997).

### Important Bird Areas (IBAs)

Birdlife International (Hunt *et. al.* 2000) classifies the area of *'The Gearagh and the Inishcarra reservoir'* as an Important Bird Area (Republic of Ireland IBA no. 84). The IBA covers The Gearagh and the upper part of the Inishcarra reservoir, as far downstream as Carrigadrohid dam. The site as a whole holds nationally important numbers of Teal (1,600 birds, 1996), Wigeon (2,000 birds, 1996), Mallard (1,750 birds, 1985), Coot (312 birds, 1995) and Golden Plover (1,500 birds, 1985).

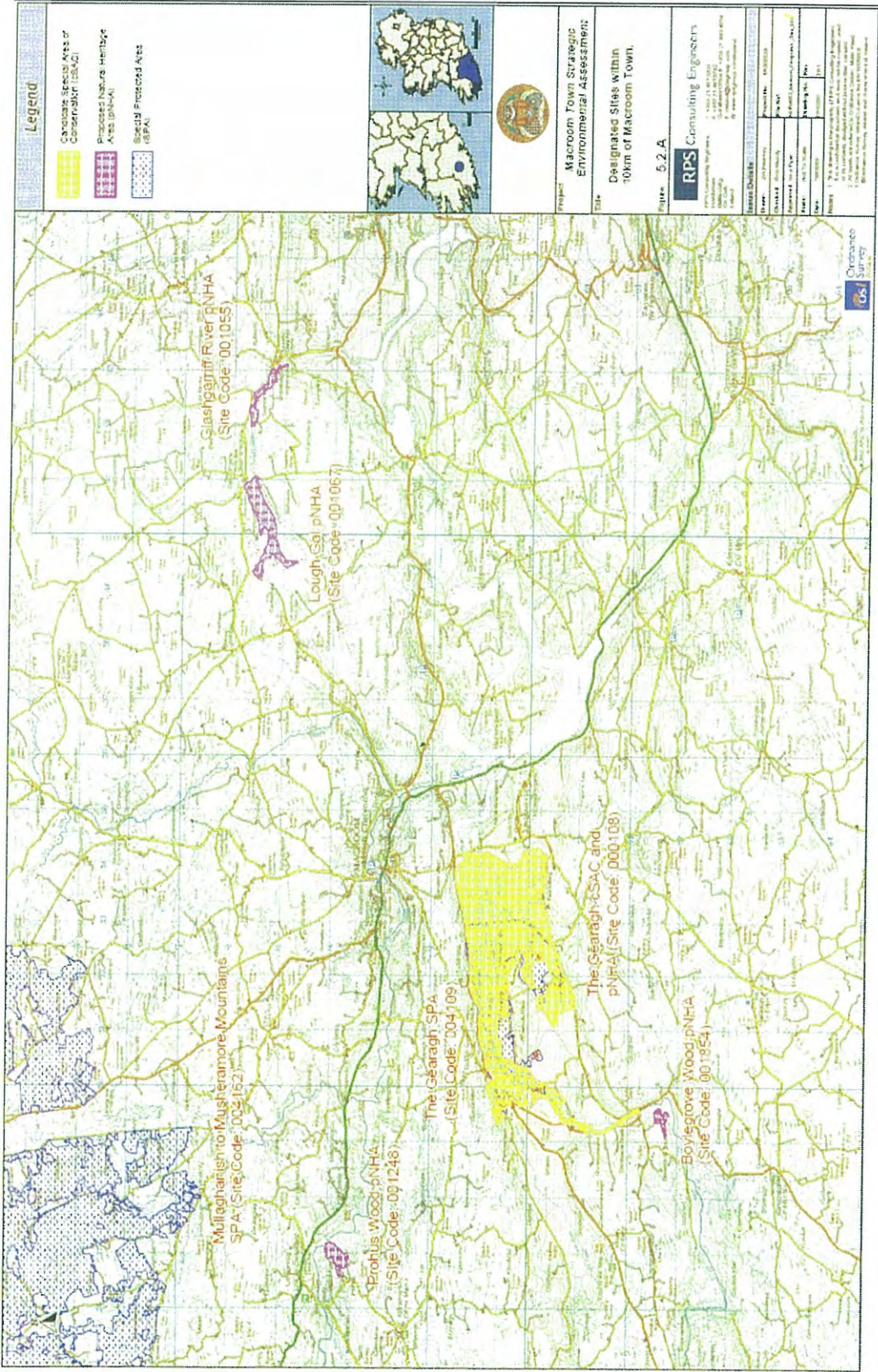








Figure 5.2.1 Designated Sites within the Study Area







### Aquatic biodiversity

The Sullane River rises to the west of Baile Bhuirne (Ballyvourney) and drains the agricultural catchment to the west of Macroom town. Several significant rivers drain into the Sullane River including the Foherish River to the west of Macroom and the Laney River to the east. In addition, Macroom features a number of streams. These occur to the north of the plan area, and run in a north-south direction. Two of the streams feed into the Sullane, while the third stream flowing to the east of Macroom, feeds into the Laney. These watercourses represent an important environmental resource in Macroom. The Sullane River flows through Macroom and drains into the Lee Valley Reservoir downstream.

A recent Environmental Protection Agency (EPA) report (2005: EPA River Water Quality Report) concluded that the water quality of both the Sullane and the Laney was satisfactory. The water quality of the Sullane River is continually monitored by the EPA. The last survey which was carried out in 2005 at the sampling station directly to the west of Macroom gave a 'Q value' of 5 (meaning that it is of 'High' status). The sampling station to the east of Macroom produced a 'Q value' rating of 4 (meaning that it is of 'Good' status).

The Sullane River holds brown trout, sea trout, Atlantic salmon, eel and brook lamprey (SWRFB *pers. comm.*, 2008). Brook lamprey (*Lampetra planeri*) have been recorded as spawning in the Sullane (Kurz & Costello 1998). Freshwater pearl-mussel (*Margaritifera margaritifera*) have been recorded in the Sullane, the Foherish and the Laney Rivers (Clabby *et. al.*, 2003).

### Ecological Networks

An ecological network is a network that consists of core areas of high biodiversity value and corridors or stepping stones which are linkages between them. Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated. They also provide important linkages for wildlife. The rivers, riverbanks, treelines and hedgerows are important components of Macroom's ecological networks, allowing for linkages between and within designated ecological sites and the non-designated surrounding countryside. The ecological network approach supports management of linkages between areas of biodiversity value, between areas used by species for different functions and between local populations of different species.

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

### Invasive Species

Invasive species is the term used to describe a non-native species which becomes established in natural, or semi natural ecosystems or habitats, is an agent of change, and threatens native biological diversity (or has potential to do so).

As yet, there is no record of any invasive species getting a foothold within *The Gearagh* pNHA, cSAC and SPA (*pers. comm.*, NPWS, 2008). However there is a potential threat from a number of sources.

Zebra Mussel (*Dreissena polymorpha*), a highly invasive bivalve mollusc, could enter the Sullane River on boats and ships particularly if the Lee Valley reservoir sees an influx in boating visitors in the future. Other potential sources for invasive species include surface water runoff from garden centres, which may bring seeds or fragments of living plants into natural systems; and exotic species planted in parks and residential gardens, which may 'escape' and spread into natural habitats.

Other invasive species threatening natural systems in Ireland include Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Grey Squirrel (*Sciurus carolinensis*). Any of these could potentially become a problem for biodiversity in Macroom.

### 5.2.3 Impact Assessment –existing environmental problems and constraints/Threats

The following environmental problems and constraints / threats to biodiversity in Macroom have been identified:

There is potential for impacts to the aquatic environment in the form of industrial and agricultural run-off, municipal sources of pollution, bridge building, fragmentation of river corridors and soil erosion. These risks apply in particular to the Sullane River. Under the Water Framework Directive, water quality must achieve "good status" by 2015.

The Gearagh cSAC, pNHA and SPA and River Sullane may come under pressure from a number of sources, notably from increased recreation and tourism developments, and additional infrastructural development including through increased surface runoff and potential impacts to groundwater quality. However, the plan includes a commitment to promotion of SUDS (NEP 3) and impact reports for projects in the vicinity of The Gearagh (NEP 8). An additional policy of the protection of The Gearagh is recommended.

Greenfield Development: All developments which take place on greenfield sites are likely cause some degree of negative impact on biodiversity. Where developments i.e. roads, housing and other infrastructural developments have occurred on greenfield sites they have replaced some semi natural and natural areas with artificial surfacing causing a gradual loss of biodiversity.



**Invasive species:** There is potential for invasive species to enter surface waters from a number of sources including runoff from garden centres, from boats and by dumping of waste from fish tanks and garden ponds. There is therefore a need to include a policy in the new plan to prevent the introduction of those alien species which threaten ecosystems, habitats or species. The utilisation of native species in amenity planting and stocking along with change in community actions to reduce the introduction and spread of non-native species should be encouraged.

**Removal of Ecological Corridors:** The removal of ecological networks / corridors is a significant issue. It is recognised that there has been a significant increase in hedgerow removal throughout Ireland in recent years.

**Climate Change:** Until recently biodiversity losses have been attributed to the spread and increased environmental impact of people, however, it seems likely that future losses will increasingly result from human induced global climate change. Climate change considerations must therefore be seen as central to the protection of the natural environment.

The N22 Macroom bypass may have potential impacts on flora and fauna and habitats within or close to the town boundary. However these issues have been addressed in the EIA for the scheme. It is important that the mitigation and monitoring measures prescribed in the EIS are adhered to.

#### **5.2.4 Evolution without implementation of the plan**

In Macroom, biodiversity, flora and fauna is offered protection through the County Development Plan and the Town Plan. Without implementation of the new Plan it is expected that there would be a continual loss of greenfield sites and semi-natural habitats. There would be no long-term guidance and each planning application would be dealt with on an individual basis, resulting in potential for long terms impacts on habitats (including fragmentation), water and other natural resources, potentially including Designated Sites.

### 5.3 POPULATION AND HUMAN HEALTH

This section looks at the well-being of the population of the town, the settlement strategy and economic development. The main threats include infrastructure constraints based on population growth, air pollution from vehicles, provision of useable amenity space, road safety, waste generation and development on greenfield lands.

The 2006 Census of population identified a population of 3,407 within the Town Council boundary area reflecting a rate of population growth in line with the national average. This section of the report outlines the policies relevant to population in the Macroom Town Council area and population, employment and household data primarily retrieved from the Census of Population 2006 and assesses progress made in these areas compared with the Macroom Town Development Plan 2003.

#### 5.3.1 Policy

Baseline National plans outlined in Chapter 4 including the National Spatial Strategy, the National Development Plan, the Retail Planning Guidelines, the Residential Planning Guidelines and the Planning and Development Act are all considered key plans/acts to reference in relation to population and human health. At a regional level the Regional Planning Guidelines for the Southwest Region will inform the policies and objectives for population and human health. While at a local level the Cork Strategic Retail Study (CSRS) 2002, Cork Strategic Retail Study (CSRS) 2008, Cork County Development Plan 2009, North and West Cork Strategic Plan 2002 to 2020 and the Macroom Electoral Local Area Plan 2005 will inform mitigation, policies and objectives in relation to the human environment (refer to Chapter 4 Related Plans).

#### 5.3.2 Baseline

This section describes the evaluation as set out in the SEA regulations of the environmental topic of population. For the purposes of evaluation, the impacts on population are divided into two, population impacts in terms of job creation and impacts on population in terms of residential population. The initial section presents a synopsis of the baseline conditions followed by a background to the Plans and policies, which influence the population of Macroom.

Table 5.3.1 below shows the intercensal period between 1996-2002, whereby the state recorded an 8% increase in population, Cork County recorded an increase (10.7%) in population while Macroom Urban District saw a significant population increase of 15.4%. Therefore during this period it was evident that Macroom Urban District had increased significantly in comparison to the state and County average.

During the most recent intercensal period of 2002-2006, the state and Cork County recorded a similar increase to the previous intercensal period at 8.2% and 11.4% respectively while Macroom Urban District had a significant population increase of 20% in the same period. It is evident that the most significant increase in population between 2002 – 2006 was in the Macroom Urban District. It would therefore



appear that Macroom is one of the fastest growing towns in County Cork. It is considered in the Macroom Development Plan 2009 that this significant increase in population is a result of availability of suitable residential land and upgraded road links to Cork City has resulted in a large increase in residential development in the town.

**Table 5.3.1: Trends in Population between the Censal Periods of 1996-2002 and 2002-2006 for the State, County Cork and Macroom Urban District**

Area	Population 1996	Population 2002	Population 2006	Change- 1996-2002	Change 2002-2006
<b>State</b>	3,626,087	3,917,203	4,239,848	+291,116 (+8%)	+322,645 (+8.2%)
<b>Cork County</b>	293,323	324,767	361,877	+31,444 (+10.7%)	+37,110 (+11.4%)
<b>Macroom Urban District</b>	2,457	2,836	3,407	379 (15.43%)	571 (20%)

Source: Census of Population 1996, 2002 and 2006<sup>1</sup>.

The age structure of the population of Macroom is important to examine, as this will have implications for future housing demand, schools and health care services. It must be noted that the figures in Table 5.3.2 below are based on the Macroom town Council area, which comprises of Macroom Urban District; the total population figure for this area is 3,407. Three categories of the population structure are examined:

- the young age dependant population (i.e. those persons within the 0-14 age cohort);
- the old age dependent population (i.e. those persons in the 65+ age cohort); and
- the working/independent age population (i.e. those persons within the 15-64 age cohort).

Table 5.3.2 Macroom Urban Age Cohort of the population 2002 - 2006

Area	0-14	15-64	65+	Total
<b>Macroom Urban 2006</b>	652 (19.1%)	2,293 (67.3%)	462 (13.6%)	3,407
<b>County Cork</b>	78,863 (22%)	245,103 (68%)	37,911 (10%)	361,877

Source: Census of Population 1996, 2002 and 2006

In 2006, 19.1% of the Macroom Urban District population was within the young age dependant population. This is 2.9% below that for the County, which has a young age dependant population of approximately 22%. This has negative implications for the future working/independent age cohort as there is likely to be a slight natural decline in the future housing and employment demand in the area, as there is likely to be less young adults moving into the labour market and setting up independent households in the future. However the working/independent age cohort is in line with the county average therefore evening out this imbalance.

In 2006 13.6% of the population in Macroom Urban District were within the old age dependent population of people with approximately 462 people. Macroom had a greater number of persons aged 65 and over than in the County which only recorded 10% of its population within the 65+ age cohort in 2006, which is indicative of an ageing population in Macroom Urban area. This increase in the percentage of an elderly population has long-term implications relating to health and social service needs.

Reflecting the national economic growth of recent years and increased participation in employment, a total of 93.4% of the labour force of Macroom were engaged in employment in 2006, this is slightly higher than the County average of 91.4%. According to the 2006 Census figures approximately 6.5% of the population in Macroom Urban District were unemployed or looking for their first job, this is lower than the county average of 8.5%. The largest percentage of persons at work in Macroom Urban District are in professional occupations representing 15.6% of the total workforce, while 14% of people are employed as manufacturing workers which is the second most popular occupation in the Macroom area.

### Population Projections

The Macroom Town Development Plan population projections derive from the updated Cork Area Strategic Plan 2008 and the 2006 Census of population. Population projections work from 2006 as the baseline year whereby the population of Macroom stood at 3,407.

According to the Cork Area Strategic Plan population projections for Macroom Urban District projects an annual net increase of some 120 persons per annum. This would signify a population increase of 1,080



between 2006 to the end of the plan period at 2015. The plan therefore projects a population of 4,487 by 2015 in accordance with CASP.

### **Zoning Provision**

The National Building Agency undertook a capacity study of the zoned lands within Macroom in preparation of the draft plan in 2008. As a result of this study it was considered that 36 hectares from the original plan and some additional 18 hectares should be zoned for residential development. According to the draft plan additional lands were zoned over and above the population projections.

The Macroom Town Development Plan 2009 outlines that additional lands have been rezoned based on the following rationale:

That the Development Plan Guidelines (DoEHLG 2007) recommend that planning authorities need to zone enough land for residential needs for at least nine years. This would mean that more land than is necessary should be zoned to accommodate population projections for a further three years, therefore increasing population projections in terms of zoning to 4,847.

The plan also notes that some of the lands that had already been zoned within previous Development Plans would not become available for development and/or would not be entirely developable in terms of site conditions, open space and servicing requirements. Bearing the above in mind higher densities have been proposed on the newly zoned lands in order to reduce the amount of greenfield land released within this development plan period and also to maximise consolidation of the town centre.

In addition to the above, the plan contains Policy H2 which indicates that new housing development should 'Apply a sequential approach to applications for housing development in the Town. Supporting development, in the first instance, at town centre locations, secondly at the edge of the town and finally at the periphery of the Town and on low-density sites.

### **Analysis of Population Projections and Zoning Provision**

As outlined in the draft plan additional lands have been zoned over and above the CASP population projections of 4,487 by 2015. According to the plan if all lands were to be developed to their full potential it could accommodate a minimum of 5,909 persons and a maximum of 6,512 persons, which is in excess of the CASP figures. Therefore zoning of lands is not in accordance with population projections for the Macroom Town Council area.

### **Employment Projections**

The Cork Area Strategic Plan 2008 has allocated an additional 500-projected jobs within the Macroom Urban District as the town had already exceeded the original 2020 employment projections by 2006, additional lands have been zoned in order to accommodate industrial and commercial uses within Macroom Town Council.

### **5.3.3 Impact assessment – existing environmental problems and constraints**

As outlined in the plan additional lands have been zoned over and above the CASP population projections of 4,487 by 2015. According to the plan if all lands were to be developed to their full potential it could accommodate a minimum of 5,909 persons and a maximum of 6,512 persons, which is in excess of the CASP figures. However, it is considered that there is some merit in the rationale that some lands previously zoned for residential development may not become available during the lifetime of the plan.

Therefore zoning of lands is not in accordance with population projections for the Macroom Town Council area. It is not considered that this would cause any significant environmental problems or constraints if the sequential approach to development is adhered to. The proposed plan should help to facilitate the growing population of Macroom in a sustainable manner and in accordance with various policies and objectives of both national and local plans.

### **5.3.4 Evolution without implementation of the plan**

The provision of planned residential, employment, improved infrastructure and community uses within the Macroom Town Council area will result in a better quality of life than would arise from an unstructured/unplanned approach. If the plan was not implemented, the redevelopment and renewal of the area would take place in a haphazard approach, possibly allowing growth in the form of pockets of populations developing in an ad hoc fashion throughout the Macroom Town Council area. Moreover the positive regulatory policies and objectives being introduced by the Macroom Development Plan and aimed at improving the town's vitality, character and overall environment would not be implemented through the planning and development process.



## **5.4 SOIL**

### **5.4.1 Policy**

Soils are offered protection through the proposed EC Directive 2004/35/EC of the European Parliament and of the Council for establishing a framework for the protection of soil and amending Directive 2004/35/EC. This Directive provides a common strategy for the protection and sustainable use of soil based on the principles of integration of soil concerns into other policies, preservation of soil functions within the context of sustainable use, prevention of threats to soil and migration of their effects, as well as restoration of degraded soils to a level of functionality consistent with the current and approved future use.

### **5.4.2 Baseline**

#### **Bedrock Geology**

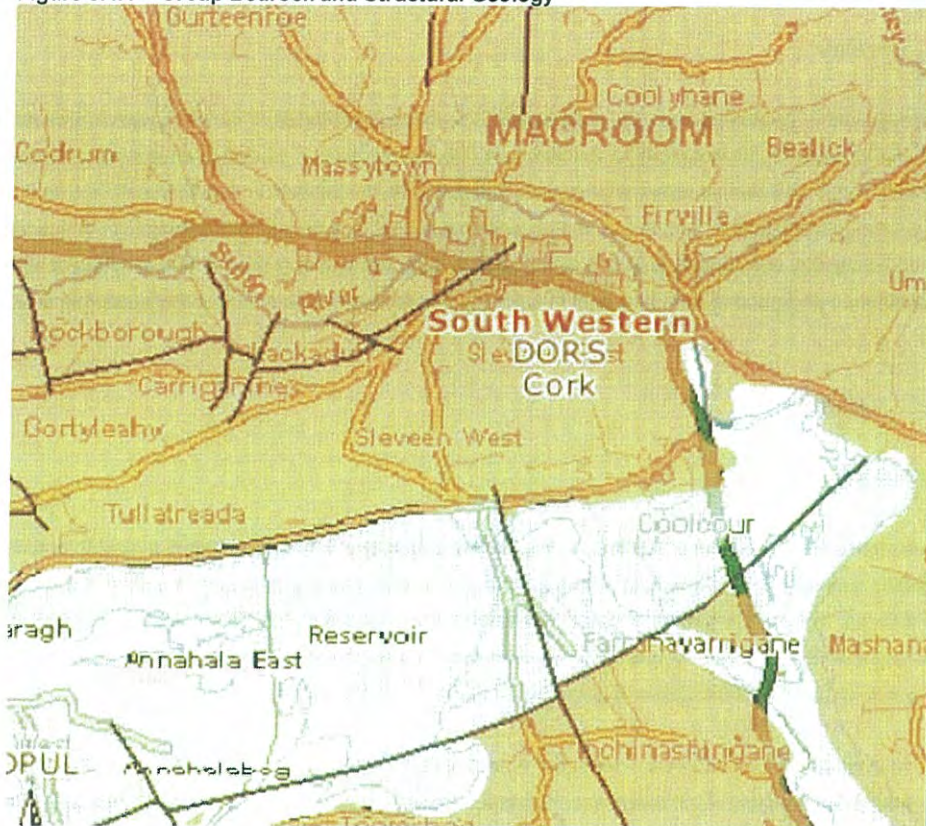
The town of Macroom is situated within a sedimentary geological setting. The underlying rock comprises of bedded sediments from the Birdhill Formation and Caha Mountain Formation. The Birdhill Formation is made up of purple siltstone and fine sandstone and deposited by fluvial deposition during the Devonian Period ~ 350 million years ago. The overlying Caha Mountain Formation comprises of purple and green sandstone and siltstone also deposited during the middle Devonian period.

South of Macroom Town Centre, the River Lee passes through a large area of Carboniferous Waulsortian Limestone. This limestone is found unbedded with some layers mudstone. The soft limestone was easily eroded by fluvial motion and allowed the river to form an extensive lough and reservoir.

The Macroom area also underwent a series of structural deformation events. A large thrust fault can be found trending east-west through the town centre – Reananerree Thrust. A number of normal faults can be found offset from the Reananerree Thrust Fault and are typically orientated Northwest-southeast (perpendicular to the Reananerree thrust fault).

Subsequently the county rock is also found to be folded into a syncline fold (U-shaped) orientated northeast-southwest.

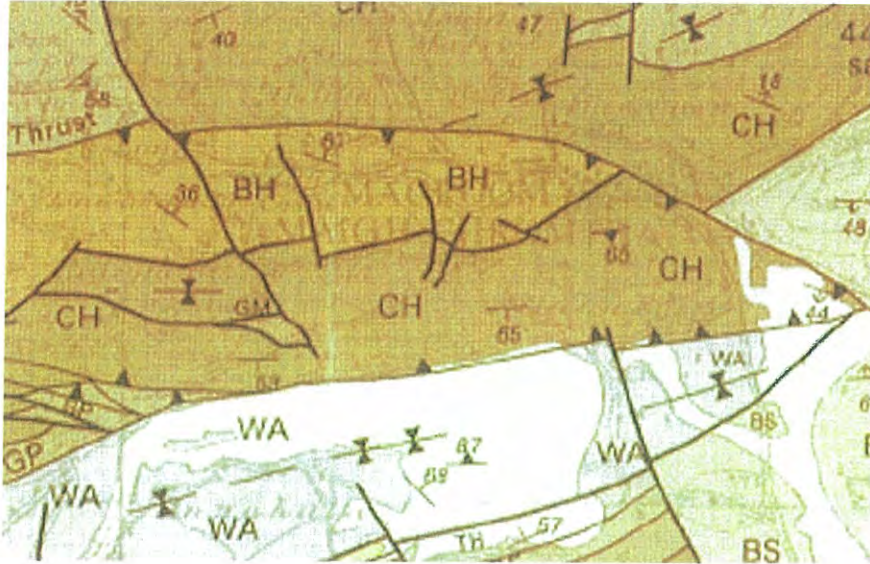
Figure 5.4.1 – Group Bedrock and Structural Geology



Source: Geology of Kerry-Cork, Geological Survey of Ireland (GSI) (1997), Sheet 21  
 Source GSI Mapper



Figure 5.4.2 – Formation Bedrock Geology



Colour Code	Formation
BH	Bird Hill Formation
CH	Caha Mountain Formation
WA	Waulsortian Limestone Formation

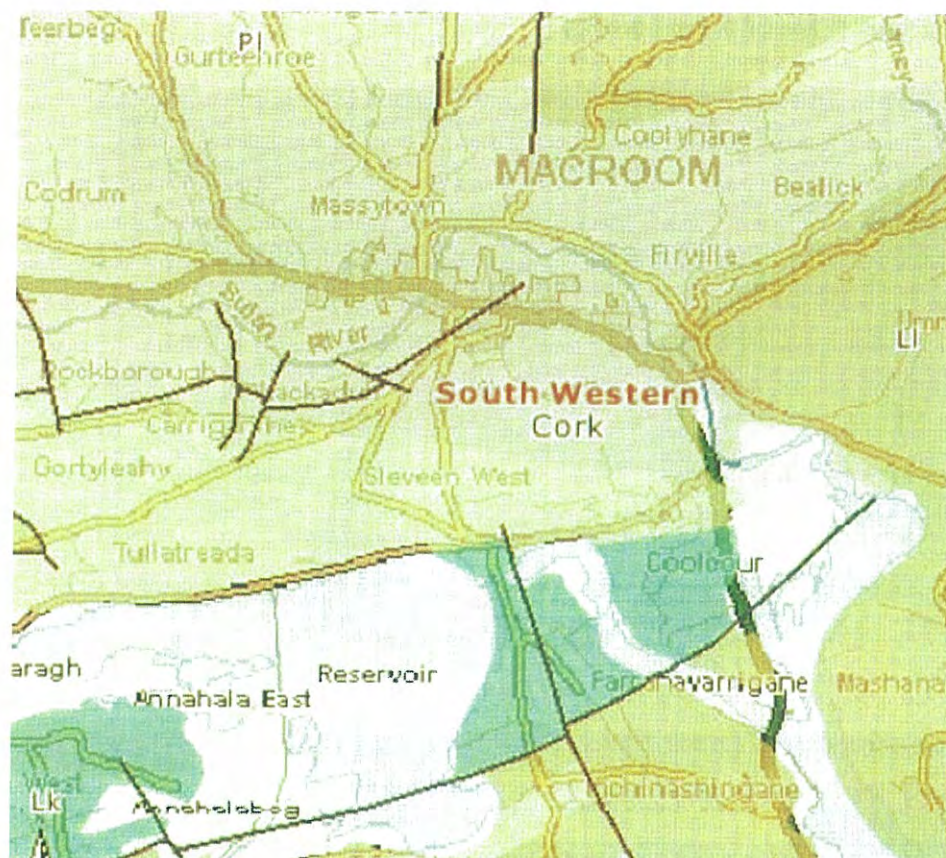
Source GSI Mapper

### Hydrogeology

According to the GSI, the underlying aquifer is classified as a poor aquifer (PI), considered to be generally unproductive except for local zones. Such an aquifer is capable of yielding only enough water to springs and boreholes to supply single houses, small farms or small group water schemes. The GSI vulnerability rating in the Macroom Town area is extreme and extreme with rock near the surface.

Bedrock east of the town centre can be considered as a locally important aquifer – bedrock is moderately productive in local zones. Karstic/limestone areas south of Macroom can be considered as locally important bedrock aquifers. The presence of karst can increase vulnerability through rapid movement of water.

Figure 5.4.3 – Local Aquifers



- Lk - Locally Important Aquifer - Karstified
- Li - Locally Important Aquifer - Bedrock which is Moderately Productive only Local Zones
- Pl - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones

Source GSI mapper

**Sites of Geological Heritage/Interest**

Within the Macroom area there is the following site of geological interest -

Table 5.4.1 – Areas of Geological Interest within the Study Area

Site Name	Principal Characteristics	Location
River Sullane	Fluvial - river channel within bog	Ballymakeery, Macroom



### **Soils and Subsoils**

The Macroom area generally consists of glacial gravel and tills laid down during the last glaciation period over 10,000 years ago.

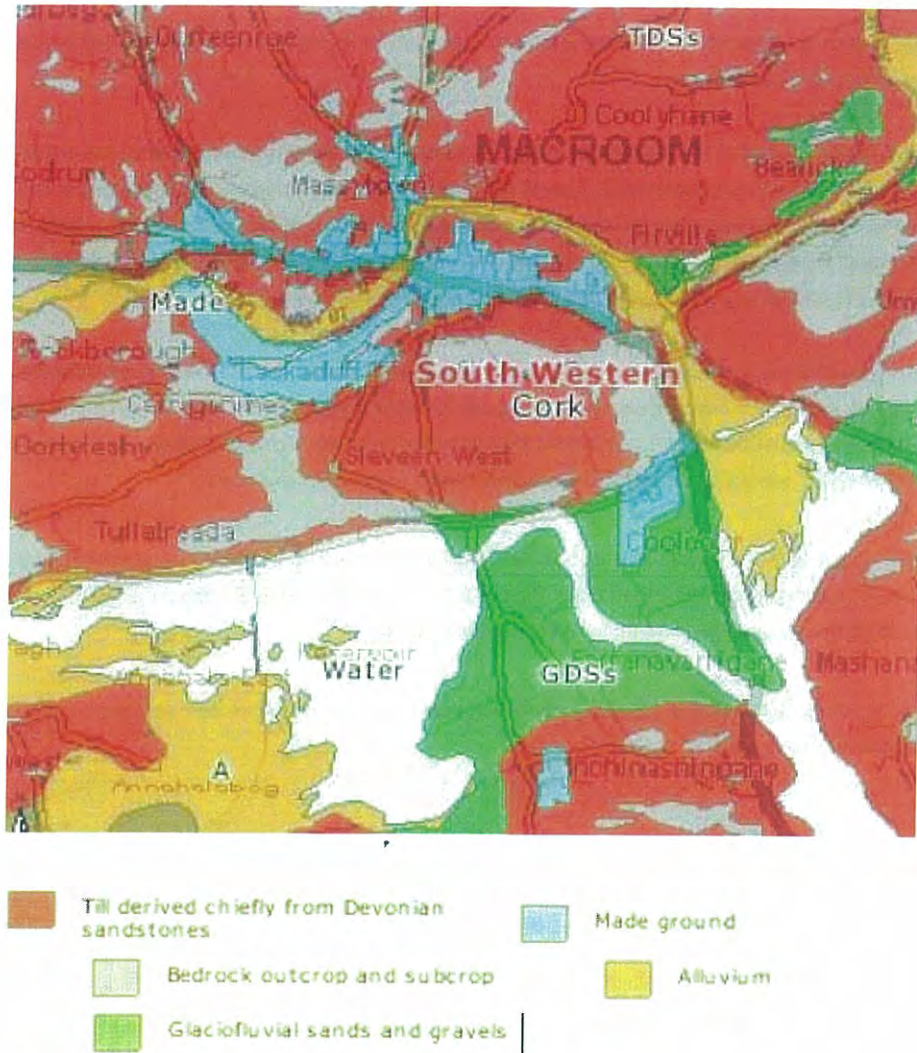
The drift deposits across the Study Area are mainly glacial in origin consisting of sandy gravel with many cobbles, boulders and larger particles. Alluvial deposits are also present along and adjacent to the rivers that pass through the Study Area. These deposits are likely to consist of soft compressible clay, silts, sands and gravels. Localised bogs and marshes are recorded in the low lying areas adjacent to many of the rivers. No extensive areas of peat or bog should be present within the Study Area.

While the town area is generally made up of man made hard standing surfaces and landscaping the surrounding area is overlain by Devonian sandstone till. South of the town the subsoil consists chiefly of Devonian red sandstone till and some bare outcrop. The area along the Lee reservoir comprises of glacio-fluvial sands and gravels formed by the melt waters of the melting glaciers.

Along the banks of the River Sullane, alluvium soils can be found, mostly likely produced but the flooding events of the river of the centuries. Similar alluvium can also be found along the River Lee as it flows from the west and the river Laney as it flows from the north.

The extensive river and glacial deposited sands and gravel provide numerous quarrying opportunities in the greater Macroom area.

Figure 5.4.4– Soils and Deposits within the Macroom Area



Source: GSI mapper

The depths of the drift deposits within the Study Area are related to the topography. The areas of high ground and steep slopes which cover much of the Study Area consist predominantly of rock outcrops at the surface with very little or no overburden. Generally the depth of overburden increases as the elevation of the ground decreases with the shallower slopes to the hills of the lower areas indicating a greater thickness of drift deposit. The greatest thickness of overburden is in the low lying areas, coinciding with those areas underlain by limestone. The majority of the Study Area west of Macroom consists of rock outcrops and very shallow overburden whilst the area east of Macroom has the greatest depths of overburden in excess of 10 metres.



### Quarrying and Mining

At present there are no mining activities being carried out in the Macroom area. However quarrying is ongoing at numerous locations in the vicinity of Macroom. The local bedrock and quaternary geology is of considerable economic value, where the local sands, gravels and sandstones are extracted for construction material and aggregates. There are currently four economically viable sites in operation in the Macroom area.

- Mid Cork Quarries - Kilmicheal, Macroom, Co. Cork      Extraction: 250,000 -500,000 ton per annum.
- Castlemore Quarry – Crookstown, Co. Cork      Extraction: 500,000 - 1,000,000 ton per annum
- Macroom Sand and Gravel (Pit) – Umera, Macroom, Co. Cork      Extraction: <100,000 ton per annum
- Killinardish Pit – Coachford, Co. Cork      Extraction: 100,000 -250,000 ton per annum

#### 5.4.3 Impact assessment –existing environmental problems and constraints

Greenfield sites - any proposed developments on greenfield sites involves changing the character of the ground and soil. New developments have the potential to contaminate the soil and underlying groundwater, particularly in the case of septic tanks and poor wastewater treatment facilities. Existing activities such as agriculture and manufacturing may also pose a risk to soil and groundwater.

Soil erosion – construction, agriculture and forestry can lead to soil erosion, which has a negative affects on water quality and aquatic biodiversity. Soil erosion results in a loss of nutrients in the upper layers of the soils also leading to a reduced water-holding capacity. Soil erosion can also lead to sediment movement and agricultural pollution into watercourses. This can lead to increased solids in watercourses, disruption of ecosystems and contamination of drinking water.

The frequent rock outcrops and the presence of rock close to the ground surface throughout the Study Area and particularly to the west of Macroom may be a constraint to road construction if excavation through rock for cuttings is required. This may be particularly pertinent to the areas of high ground west of Macroom.

In the low lying areas notably to the south and east of Macroom the thickness of overburden will mean that the underlying geology should have little geotechnical bearing or influence on road construction although solution features associated with the limestone outcrops may be a constraint to road construction if present.

#### **5.4.4 Evolution without implementation of the Plan**

The proposed Soil Directive suggests the encouragement of development on brownfield sites through sustainable redevelopment of existing sites. The reuse of urban brownfield sites in particular will reduce urban sprawl and the need to develop greenfield sites.

The new Plan will provide policies and guidance for development of brownfield sites over Greenfield sites. In the absence of the Plan there is the potential for further development of Greenfield sites resulting in a loss of soil resource to development and soil erosion due to removal of materials due to construction works.

If quarrying is managed poorly, quarrying (and/or gravel pits) may lead to depletion of subsoils, removal of natural resources and the displacement of the soil layer.



## **5.5 WATER**

### **5.5.1 Policy**

#### **National Policy**

In the interest of maintaining good water quality in the Macroom area, the County Council set about fulfilling its obligation under the European Communities (Water Policy) Regulations, 2003 (SI No.722 of 2003) transposed by the Water Framework Directive (2000/60/EC) into Irish Law offers protection for water in Ireland. The Water Framework Directive (WFD) sets an objective of achieving at least good status for all water bodies and aims to ensure that no further deterioration in status of any waters will occur by 2015.

Good status for surface water is a combination of the chemical quality, biological quality and microbiological quality that must be achieved. For Groundwater Good Status refers to groundwater chemical water quality and quantity.

In addition to the Water Framework Directive, water in Ireland is also offered protection under European Community (Groundwater Directive, 80/68/EEC) and National Legislation (Local Government (Water Pollution) Act; The Waste Management Acts and the Planning and Development Act).

Drinking Water Regulations (S.I No 439 of 2000) ensure that the presence of a single faecal coliform in a water supply is unacceptable.

#### **Local Policies**

The South Western River Basin District (SWRBD) "A Future for Our Waters" and "Water Matters" outline the requirements of the EU Water Framework Directive, and detail the main issues of investigation to date. These include wastewater and industrial discharges, landfills, quarries, mines and contaminated lands, agriculture, wastewater from unsewered properties, forestry, usage and discharge of dangerous substances, physical modifications, abstractions and local issues. The booklet "Water Matters" also outlines the next steps in the process of preparing a River Basin Management Plan, which is due to be adopted in 2009. The document "A Future for Our Waters" indicates the findings of Risk Assessments that have been carried out on water bodies within the SWRBD. River Water Bodies "at risk" have been identified with the catchments of the River Lee as showing a high proportion of "at risk" water bodies. Lake Risk Assessment results have identified that the Carrigadrohid reservoir (within the study area) is also "at risk". A River Basin Management Plan is due to be adopted in 2009.

Lee Catchment Flood Risk Assessment and Management Study is intended to produce a Catchment Flood Risk Management Plan, which when produced will identify a programme of prioritised studies, actions and works to manage the flood risk in the Lee Catchment in the long-term, and make

recommendations in relation to appropriate development planning. This study is the primary pilot project for a new national approach to flood risk management.

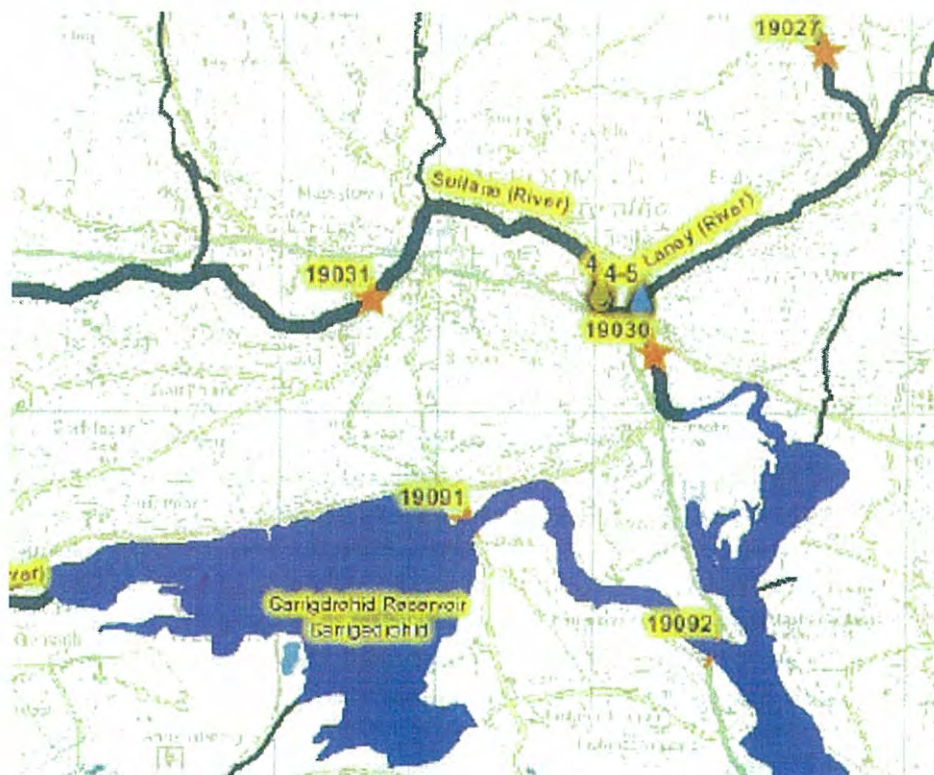
### 5.5.2 Baseline

#### Surface Water

Macroom town lies along the River Sullane, which enters the River Lee to the south east of the town centre. The River Laney also can be found merging with the River Sullane to the east of the town centre. To the south of Macroom the River Lee flows from west to east particularly at the reservoir at Carrigadrohid.

In order to manage and assess water quality, a River Basin Management Plan was put in place in the south west of Ireland. Macroom lies within the South Western River Basin District (SWRBD) the plan for which is due to be adopted in 2009. Baseline data including the various risk assessments for surface water and groundwater's in the Macroom are outlined below.

Figure 5.5.1 – Streams and Rivers within the Macroom Area



Source – EPA ENvision Mapper



Risk assessments have been carried out on all water bodies within the SWRBD and four risk categories were created.

1. Not at Risk;
2. Probably not at Risk;
3. Probably at Risk; and
4. At Risk.

Figure 5.5.1 shows a map of risk assessments undertaken by the SWRBD for Rivers and streams within Macroom and Figure 5.5.3 shows a map of risk assessment for Groundwater throughout the Macroom area.

All rivers/streams within Macroom (namely River Sullane, Lee and Laney) have received an EPA Q Value rating of 4 or above, indicating "good status". However the Water Framework Directive (WFD) has categorised the River Sullane as "Possibly At Risk of Not Achieving Good Status". However the River Laney is classed as "Expected to Achieve Good Status". The River Lee and Carrigadrohid Reservoir are considered "At Risk of Not Achieving Good Status" due to the threat of pollution and contamination namely from agricultural run-off and industrial/domestic wastewater.

Figure 5.5.3 shows the Water Framework Directives risk classification of rivers within the study area.

**Table 5.5.1 - Water Framework Directive and EPA ratings of Rivers, Streams and Bathing Waters within the Study Area**

River/Streams	EPA Q Rating	Status	Water Framework Directive Rating
Laney	4-5	Class A	Expected to Achieve Good Status
Sullane	4		Possibly at Risk of Not Achieving Good Status
River Lee / Carrigadrohid Reservoir	4		

[Source – EPA ENvision Mapper]

**Table 5.5.2 - EPA River Water Quality Classes and related EPA Biological River Quality Classification Parameters**

River Water Class	Quality Class	Status Water Quality Diversity of Biological	Community
Class A	Unpolluted Fair	Good High	Reduced
Class B	Slightly Polluted Doubtful	Fair Reduced	Much Reduced
Class C	Moderately Polluted Poor	Doubtful Much Reduced	Low
Class D	Seriously Polluted Bad	Poor Low	Very Low

#### Groundwater

Groundwater forms an integral part of all ecosystems and within the Macroom area is a significant resource. A number of private drinking water supplies are taken from groundwater reserves.

Groundwater is subject to contamination from agriculture, poorly designed/constructed and maintained domestic wastewater treatment infrastructure, industrial sources etc. Groundwater also contributes to surface water quality providing residual flows from rivers and streams. It is also integral to the support of wetlands.

Earthworks, cuttings or dewatering may have the potential to locally lower the groundwater table, which may impact on shallow domestic wells close to the proposed road. Further, road surface run-off, if not directed into properly constructed drainage outlets, may also impact on these shallow wells.

Road runoff and accidental spillage can affect groundwater quality and wells. Consideration will have to be given to road drainage and pollution control measures. Where there are no surface water features, soakaways may be used for road drainage.

Table 5.5.3 summarizes the groundwater throughout the Study Area. This information is presented in Figures 5.5.3 and 5.5.4.



Table 5.5.3 - Summary of GW Ratings Throughout Macroom

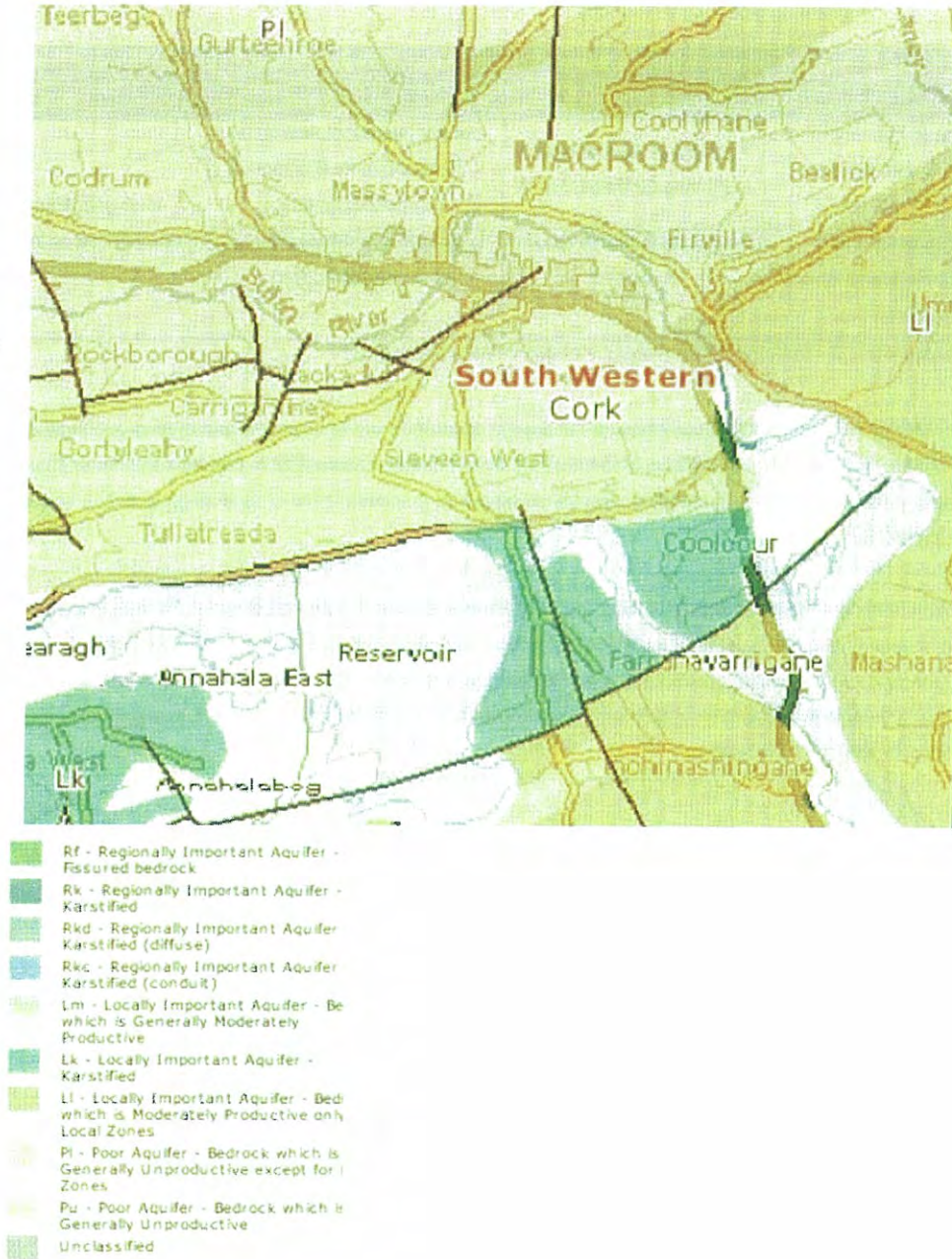
Location	Water Framework Directive Rating	Aquifer Classification	Aquifer Vulnerability
Macroom Town centre and Environs	Possibly at Risk of Not Achieving Good Status	Locally Important Aquifer – Moderately Productive in Local Zones (LI)	High – Extreme (some rock near surface)
Carrigadrohid River Bank and environs	Expected to Achieve Good Status	Locally Important Aquifer – Karstified (Lk)	

Source – WFD - EPA ENvision Mapper, Aquifer Vulnerability - GSI

The Water Framework Directive classifies a large proportion of the Macroom urban area groundwater as “Possibly at Risk of Not Achieving Good Status”. Also aquifer vulnerability can be considered high with some rock found near surface, therefore verifying a possible risk. See Figure 5.5.2 – Aquifer Vulnerability

Macroom is served by a groundwater and surface water source, which comes from the Sullane River in the centre of town. A review of the Geological Survey of Ireland Domestic Water Well Records (February 2001) indicates that there are numerous registered domestic wells located within the Study Area. These wells have generally been recorded as being installed in limestone or sandstone and are usually less than 10 m deep.

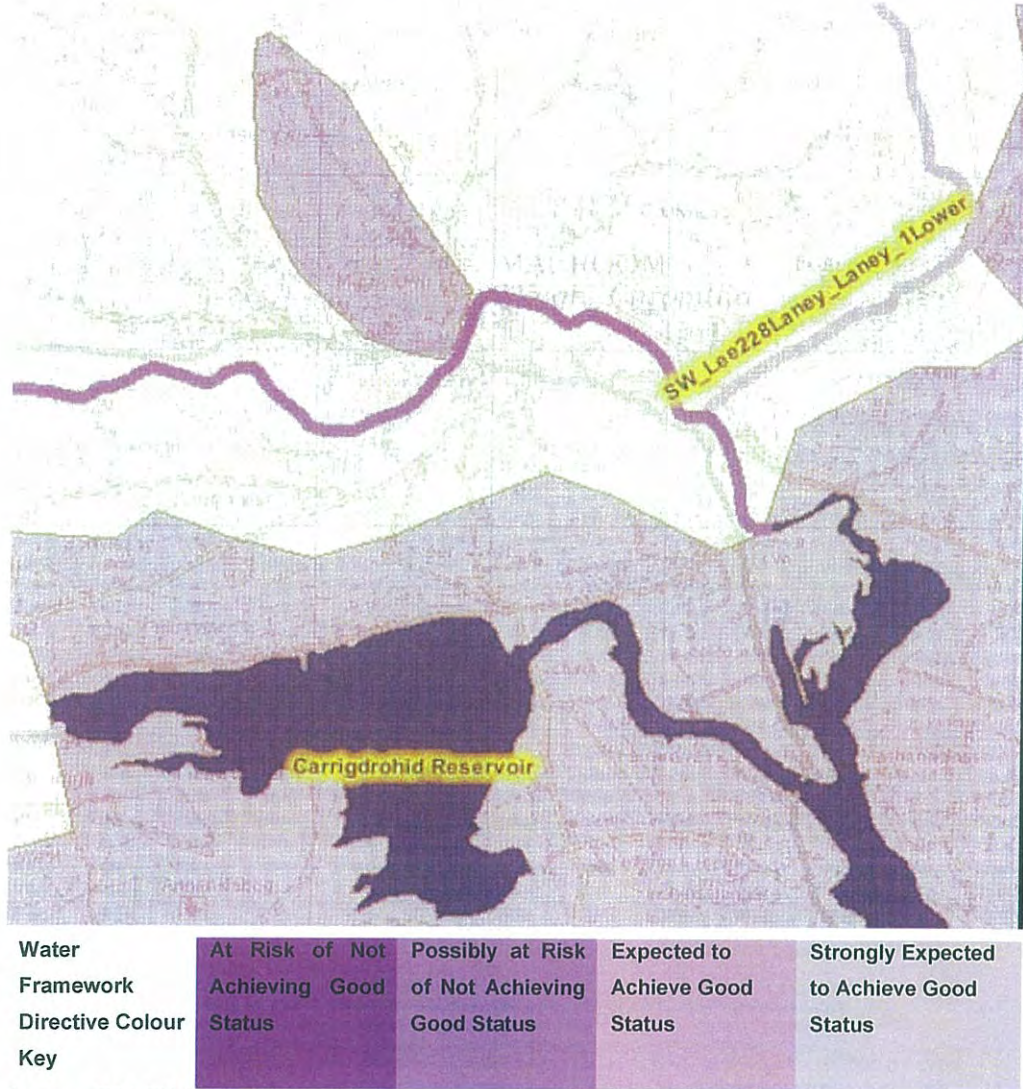
Figure 5.5.2 – Bedrock Aquifer Vulnerability in the Macroom Area



Source: GSI GW Mapper



Figure 5.5.3 - WFD Risk Assessment Rating for GW



Source – EPA ENvision Mapper

Figure 5.5.4 - Groundwater Vulnerability Within the Study Area



- E (Rock near Surface or Karst)
- E - Extreme
- H - High
- M - Moderate
- L - Low
- HL - High to Low. Only an interim s took place.
- Water

Source: GSI GW Mapper

**Fisheries**

Many of the rivers and tributaries within the Study Area are salmonid habitat. The River Lee remains a designated Salmonid Water under the EC (Quality of Salmonid Waters) Regulations of 1988 (SI 293 1988), implementing the Freshwater Fish Directive (78/659/EEC). The Carrigrohilly reservoir have now become important coarse fisheries in their own right.



Pike, Perch Bream, Rudd and Bream-Rudd hybrid are the main species of interest to fishermen using the reservoirs. Brown Trout and to a lesser extent Salmon are the species of interest to fishermen using the remaining stretches of river.

Eutrophication due to agricultural intensification is a threat throughout the area. Consultation with the South Western Regional Fisheries Board will be required at the route selection stage and the organization should be involved with any proposed mitigation works.

### Flooding

Macroom has not suffered from any major flooding problems in recent year. The most notable incident occurred in August of 1986, where the River Sullane and Laney bursts their banks causing major damage to agricultural land, business property and private dwellings alike. Flooding was caused by extended periods of heavy rain causing the rivers to spread in alternative directions.

### 5.5.3 Impact Assessment – existing environmental problems and constraints

There are a variety of activities both within and outside the study area, which have the potential to impact on water quality. These include sewerage treatment works, domestic water treatment systems, housing, construction work, industry, landfill, spillages, increased road runoff and agriculture.

Existing problems within the Macroom area include:

- Surface Water Pollution -Under the WFD The River Lee (Carrigadrohind Reservoir) and river Sullane is classified as "Possibly at Risk of Not Achieving Good Status"
- Groundwater Pollution - The town centre of study area is considered "probably at risk of not achieving good status" for groundwater
- Impacts to Fisheries - Direct impacts to water will have indirect effects on fisheries.
- Flooding- Flooding has not been identified as important particularly in relation to areas where land zoned for development is proposed near or adjacent to rivers or their floodplains. However the threat of climate change and global warming may have an influence over meteorological conditions such that to increase flooding in the study area. Strict control of planning will be required in these areas i.e. along the Sullane River Valley and the OPW's Guidelines on Flood Risk should be adhered to.
- Municipal Wastewater Treatment and Domestic Wastewater Treatment – There is a possibility of unchecked increase in demand for wastewater treatment with potential for increased pollution to surface waters. Therefore correct treatment of wastewater is an important factor to consider in the quality of surface water. It is essential that the WWTP operates to highest standards and that monitoring of the performance of wastewater treatment plant and sewerage network is undertaken to capture leakages to GW and SW.
- Impact to the Sullane River and its tributaries in terms of new pedestrian and vehicular bridges.

#### **5.5.4 Evolution without implementation of the plan**

A review of the existing baseline information shows that a number of water bodies in the study area are under pressure from various sources of pollution, which has resulted in reduced biodiversity, poor water quality and algal blooms. In the event that the Plan is not updated there is potential for increased pressure on these water bodies and most water bodies would be unlikely to reach the objectives of the WFD. If water quality were to deteriorate further or experience a reduction in its quality status, there would also be increased adverse impacts on biodiversity, flora and fauna, fisheries, drinking water, human health and soils. The new 2009 to 2015 plan will steer development away from watercourses rather than along or within their floodplains. In addition the aesthetics of the Lee River Valley and surrounding tributaries would suffer which would have an indirect effect on tourism.

Also, in the absence of the Plan there is a possibility of unchecked increase in demand for wastewater treatment with potential for increased pollution of surface water.



## 5.6 AIR, CLIMATE AND ENERGY

### 5.6.1 Policy

At international level the Air Quality Framework Directive 96/62/EC sets out standards for air quality. The Directive was transposed into Irish law by the Environmental Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I No. 33 of 1999).

In March 2007 the Government launched its Energy White Paper entitled '*Delivering a Sustainable Energy Future for Ireland*'. The paper was devised to be a practical action-based strategy for achieving a new energy future for Ireland and spans the timeframe 2007-2020. Key to the strategy are the three pillars of energy supply - security, sustainability, and economic competitiveness.

At a national level the National Climate Change Strategy 2007-2011 provides for the protection of air quality. The strategy for reducing emissions will be shared across all sectors but the main focus will be on transport, residential, industry, electricity production, the public sector and waste. The new Programme for Government outlines a 3% reduction in greenhouse gas emissions per annum. The programme will also require Ireland to join the top 5 countries in the world, as measured by the Environmental Performance Index (EPI). The National Climate Change Strategy will also be supported by other relevant government policy such as the National Development Plan, Transport 21, National Energy policy 2007 and the at a local level there are currently two objectives in relation to energy and climate change in the County Development Plan.

#### Climate Change

INF 4-2 It is an objective to support the national Climate Change Strategy and in general to facilitate measures which seek to reduce emissions of greenhouse gases.

#### Renewable Energy Production

INF 4-3 It is an objective generally to encourage the production of energy from renewable sources, including in particular that from biomass, waste material, solar wave and wind energy, subject to normal proper planning considerations, including in particular impact on areas of environmental or landscape amenity.

While there are no objectives directly relating to air quality the plan states *that the long term economic, social and environmental well-being of Cork requires water and air quality to be of the highest possible standard.*

## 5.6.2 Baseline

### Air Quality

In general the air quality in Ireland is considered to be good and this is primarily as a result of the prevailing Atlantic southwesterly winds crossing the country. The EPA monitors the air quality across the country, dividing the country into regions or zones. For Ireland, four zones, A, B, C and D are defined 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 named cities and large towns) and Zone D (Rural Ireland, i.e. the remainder of the State excluding Zones A, B and C).

Air quality monitoring and assessments are undertaken at 5 locations in Cork, of which 3 are located within Cork City Council area and 2 locations are within the administrative area of Cork County Council. Air quality is monitored and assessed in Cork County at Glashaboy and Cork Harbour at Passage West. There appears to be a small decreasing trend in concentrations in recent years.

- Suspended particulates reached about 90% of the EU limits in the past and have now reduced to about 10% of the limit due to the ban on the sale of coal. These particles arise from the inefficient combustion of solid fuels and diesel.
- New monitoring parameters called PM<sub>10</sub> and PM<sub>2.5</sub> are now being used to monitor for particulates. These measure particulates less than 10 and 2.5 microns in diameter. Results from the gravimetric method indicate compliance at about 30 % of the EU annual mean limit.
- Sulphur dioxide levels were always quite low in Cork. The first smokeless fuels increased levels but levels have now fallen again to previous values. The old method for monitoring is compliant at about 7% of the standard. The new method is at about the same level of compliance with the new standard. Sulphur is a contaminant in most types of fuel.
- Nitrogen dioxide average values are about 40% of the mean limit. It arises from air being used as an oxidant in the high temperature combustion of fuel in space heating and traffic.
- Ozone levels were in compliance. There were 9 exceedances of the 8 hour running average while 25 are allowed. Ozone levels can be strongly influenced by imported pollution and/or natural sunshine events. Rural stations in Ireland have far higher levels than our urban station because nitric oxide reduces levels in cities. It is only in urban areas with extreme traffic densities and very high sunshine levels that a different series of reactions dominate to produce very high ozone levels. Ozone has always been present in ambient air but levels have increased due to pollution. It also arises due to diffusion downwards from the stratosphere
- Carbon monoxide levels are about 36% of the standard operative in 2005. It arises from poor oxidation of fuel.
- Lead levels are about 4 % of the standard. This is a major decrease from the 1980's. Unleaded petrol is now the only type available. It is a petrol additive to prevent "knock" and improve acceleration.
- The new continuous monitor, in operation since March 2000, indicates benzene levels to be about 10% of the standard. Benzene derives mainly from traffic fuels.

Source - Air Pollution in Cork City 2007 Report



**Climate**

The dominant influence on Ireland's climate is the Atlantic Ocean. Consequently, Ireland does not suffer from the extremes of temperature experienced by many other countries at similar latitudes. Met Eireann provides information on the various climatic conditions experienced across the country. The climate of the area is best described by meteorological measurements collected by the National Meteorological Service from the synoptic stations at Cork Airport. To characterise the prevailing conditions at the site, historical meteorological data compiled by Met Eireann ([www.meteireann.ie](http://www.meteireann.ie)) is presented for Cork Airport and is available at [www.met.ie](http://www.met.ie).

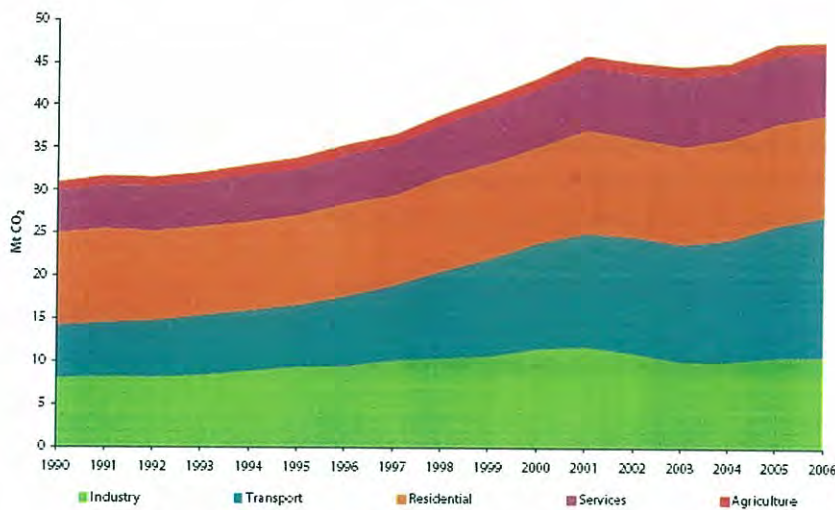
The climate is becoming ever more variable and we can no longer safely refer to past climate when planning for the future.

**Greenhouse Gas Emissions (GHG)**

Ireland currently emits 1.7% of total GHG emissions in the EU-15. This equates to 69.9 Mt of CO<sub>2</sub> equivalents. According to the most recent data (2005), Ireland currently emits 25.4% more GHG's than were emitted in 1990. This is 12% above the target set for Ireland under the EU burden-sharing agreement.

The contribution of various sectors to total energy related CO<sub>2</sub> emissions over the period 1990-2006 is shown in Figure 5a. While not the greatest contributor, the sector of most concern is transport as it has shown the greatest growth in the corresponding period. Coupled with a lack of public transport infrastructure, transport is likely to continue to increase its contribution to global warming and poor air quality in the immediate future.

**Figure 5.6.1: Energy related CO<sub>2</sub> emissions by Sector**



Source: Energy in Ireland 1990 – 2005-Trends, Issues, Forecasts and Indicators (SEI, 2006)

#### **Green House Gas Permitted Installations within the study area**

The National Allocation Plan 2008 to 2011(extracted from Articles 9 and 10 and Annex III of the EU Emissions Trading Directive (as transposed into Irish law by the European Communities (Greenhouse Gas Emissions Trading) Regulations 2004 (S.I. 437 of 2004) and amendments) contains a list of all installations with GHG permits in Ireland. A GHG permit is issued in attempt to control the emissions of gases, which have the potential to change global climatic conditions. There have been no GHG permits issued to installations in the study area.

#### **Energy Overview**

Energy is used in Ireland primarily for transportation, electricity generation and heat generation purposes. The contribution of each source to national energy demand has changed somewhat in the last number of decades, for example

- In 1990, thermal uses accounted for 44% of all primary energy used, electricity accounted for 34% and transport 22%; and
- In 2005 thermal uses accounted for 34% of all primary energy used, electricity accounted for 33% and transport 33%.

It is predicted that by 2020 the transport sector will increase its share in national energy demand to a value of 43%. Thermal and electricity uses, it is predicted, will together account for the remaining 57% of national energy demand.

#### **Current Situation**

Total Primary Energy Requirements (TPER) have increased substantially in Ireland since the early 1990s. Under a 'business as usual approach' this trend would continue, however, significant national efforts are currently being made to curb energy requirements. These efforts are outlined in national energy policy documents.

Currently, national TPER is met largely by the combustion of fossil fuels and in particular oil, with natural gas, coal and peat supplying lesser amounts of energy. There has been a change in fuel mix used for energy generation in Ireland from 1990 to 2005. In general

- the use of gas and oil has increased substantially;
- the use of coal and peat has declined; and
- the use of renewables has also increased substantially, albeit from a very low base.



TPER are projected to increase up to 2010. After this time the effect of the implementation of current energy policy is expected to result in a stabilization of TPER.

The demand for electricity is predicted to grow in the future. Predictions are that electricity demand will increase by 4.5% per annum between 2005 and 2010. In the following decade, the rate of growth is expected to slow down considerably to 1.2% per annum.

### **Fossil Fuels**

In 2005, fossil fuels supplied 98% of TPER requirements. By 2010 this value is expected to decrease to 94% and to 86% by 2020. The shortfall in supplying TPER is expected to be met through the use of renewables.

### **Oil and Coal**

Ireland imports all coal and oil requirements.

### **Natural Gas**

There is existing indigenous production at the Kinsale fields and satellite fields off the south coast of Ireland but this is expected to decline over the next few years. New indigenous production from the Seven Heads facility also came on shore in the last quarter of 2003, through the nearby Kinsale Head facility. Further indigenous gas supplies were discovered at the Corrib field, located off the West Coast of Ireland. Reserves are believed to be of the order of 20-30bcm. The development of the field was substantially delayed by planning permission difficulties. Despite the more recent finds of indigenous gas fields at Seven Heads and Corrib, the Irish gas market is expected to continue to be heavily reliant on Interconnection with the UK market.

### **Renewables**

Following the publication in January 2008 of the All Ireland Grid Study, the ESB have announced a massive new investment plan, which will see €22 billion invested in the country's electricity infrastructure in the next 12 years. The scale of the new capital spending programme is unprecedented and half of all the money is to be invested in renewable energy projects including wind, tidal, wave, and biomass energy generation.

The increased use of renewables in supplying TPER will result in a decrease in energy related carbon dioxide (CO<sub>2</sub>) emissions. The government policy document '*Delivering a Sustainable Energy Future for Ireland*' predicts that national CO<sub>2</sub> emissions will decrease by 6% as a result of the increased use of renewables in supplying future TPER.

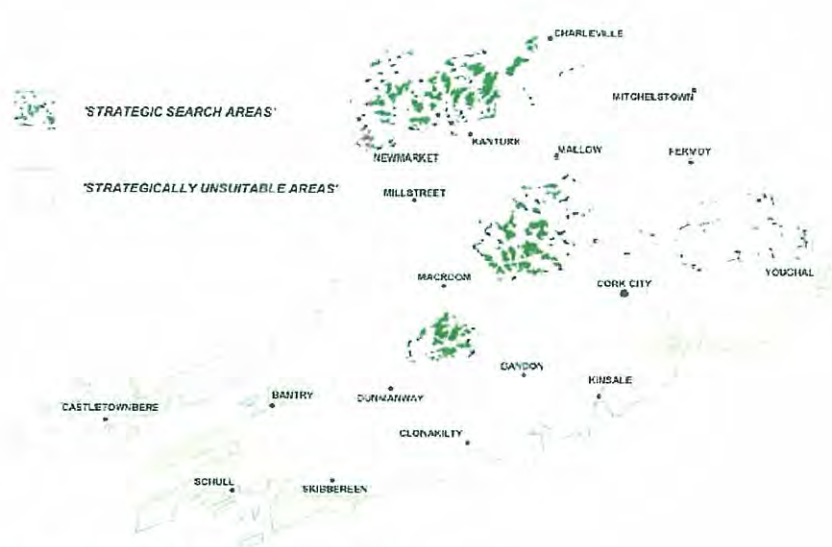
### **Windfarms**

Cork County Council has received in excess of 70 applications for wind farms in the County. However, while there have been a number of wind farms permitted in County Cork to date only approximately 6

wind farms have been or are in the process of being constructed. A number of existing permissions will have to be renewed over the lifetime of the CDP 2009-2015.

Cork County Council has identified Strategically Unsuitable Areas, which because of high landscape sensitivity, are generally considered to be unsuitable for wind energy projects. Except on a small scale and at particularly suitable locations, wind projects would normally be discouraged in these areas. However, the identification of strategically suitable areas and strategically unsuitable areas does not give any certainty about the outcome of any particular wind energy proposal and even in strategic search areas there will be particular constraints at particular sites. Areas to the south and northwest of Macroom has been identified as a Strategic Search Area

Figure 5.6.2: Windfarms in Cork



#### Strategic Wind Energy Areas in County Cork

(Source: Cork County Development Plan 2009)

#### Solar

Solar energy can be used cost-effectively to meet Irish buildings' heating requirement. Contrary to the old belief that our climate is not suitable for solar, we enjoy as much solar radiation here as most northern European countries. Ireland's annual solar irradiation varies between 950 kWh/m<sup>2</sup> per year and 1,100 kWh/m<sup>2</sup> per year. Valentia experiences the greatest solar irradiation in the country. Each square meter horizontal area therefore receives the equivalent of 100 litres of oil in free energy from the sun.



## Hydro

At present there is single hydropower plant in operation at Inniscara on the River Lee (12km from the city centre). The hydroelectric plant has a capacity of 27 MW of electricity. One other pilot scheme is in place, at Carrigrohane a micro-renewable turbine house has been supplying green electricity to 132 of Cork City Council's electricity accounts since 2004 and delivers a maximum of 1,130 MWh/yr electricity. There is no hydro electricity generating plants in the Macroon area. It is generally accepted that all the significant hydro power potential in the country has been exploited.

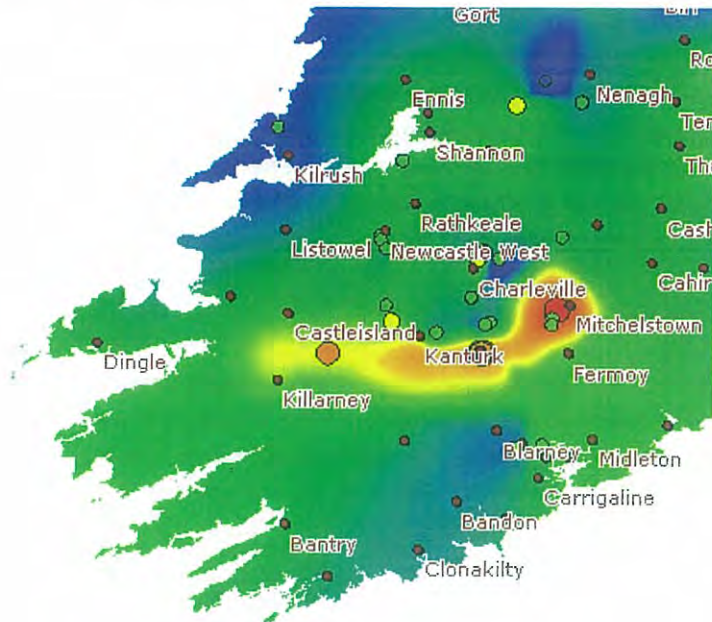
## Tidal/Wave Energy

Ireland has become one of the world leaders in wave energy technology with the development of the Wavebob. The Wavebob was developed by an Irish company and can successfully convert wave energy to electrical energy. In general the waters off South Cork have poor potential for wave energy generation. The potential wave resources for the country and county can be seen on [www.marinemaps.ie](http://www.marinemaps.ie).

## Geothermal

In 2004, CSA Group, a natural resource consultancy, completed a study commissioned by SEI, which aimed at identifying the potential resources of geothermal energy in Ireland. The results of this review indicate that Ireland is particularly well suited for the utilization of ground source heat pumps, due to its temperate climate and rainfall levels that ensure good conductivity and year round rain-fall recharge. The current installation rate is increasing rapidly and requires immediate attention to set and maintain high standards of equipment installation and operation. One of the outcomes of the project was to create a series of geothermal maps for Ireland, an example of which is illustrated below.

Figure 5.6.3: Geothermal Resources in the South West



This Map is for illustrative purposes only. All data copyright OSI + SEI

Source [www.sei.ie](http://www.sei.ie)

The map above illustrates clearly the Killarney-Mallow thrust fault and elevated ground temperatures. The warm springs in the Mallow area and in the more recently identified eastward extension to Glanworth, lie along an east northeast trending Killarney-Mallow thrust fault. Temperatures in this area vary between 13°C at Marybrook spring, Newmarket, Co. Cork (typical of groundwater temperatures in the area) to 23.5 °C at the County Council borehole north of Glanworth, Co. Cork. It is also worth noting that in broad terms silica rich rocks, of which the Devonian in the Cork and Kerry area are mostly comprised, have higher heat conductivity than limestone.

However close inspection of the maps indicate that the geothermal resource of the Macroom Area is poor in comparison to area along the Cork/Kerry county boundary and Cork /Limerick county boundary

#### Power Generation in Cork

There are 3 power stations operating in County Cork and permission has also been granted for a further power station at Aghada, which is yet to commence construction. The €400m plant at Aghada will generate 400 megawatts of electricity for the national grid every year. The plant will sit alongside an existing power station and is due to be completed in 2009. (Natural gas powered).



**Table 5.6.1: Existing Power Plants in Cork**

Location	Capacity (megawatts)	Energy Source
Innishcara	27	Hydro
Aghada	525	Gas
Marina	115	Gas

### Energy Efficiency in Buildings, Sustainable Building Design

The EU Directive on the Energy Performance of Buildings (EPBD) contains a range of provisions aimed at improving energy performance of residential and non-residential buildings, both new-build and existing. This Directive was adopted into Irish law as Regulation in 2006.

The EPBD obliges specific forms of information and advice on energy performance to be provided to building purchasers, tenants and users. This information and advice provides consumers with information regarding the energy performance of a building and enables them to take this into consideration in any decisions on property transactions.

As part of the Directive, a Building Energy Rating (BER) certificate, which is effectively an energy label, will be required at the point of sale or rental of a building, or on completion of a new building.

The Action Plan for Implementation of the EPBD in Ireland published in July 2006 proposes phased implementation of BER in Ireland as follows:

- 1 January 2007: BER of new dwellings;
- 1 July 2008: BER of new buildings, other than dwellings; and
- 1 January 2009: BER of existing dwellings and other existing buildings, when offered for sale or rental.

### 5.6.3 Impact assessment –existing environmental problems and constraints

Sustainability is a key constraint for future development. Emissions to the atmosphere, energy consumption and climate change are all interlinked. Future developments should give consideration to passive design and clean and energy efficient technologies such as renewables, district heating and co-generation.

In Ireland the transport sector is the fast growing contributor of GHG emissions. A reliable efficient public transport system within the Killarney area would reduce car dependence and combat rising CO<sub>2</sub> emissions from vehicle exhausts.

Macroom is an area of high visual amenity. It will be important to ensure that for future energy developments and the associated infrastructure does not impact adversely on the landscape. Macroom urban area has been identified as a strategically unsuitable zone for wind development in the Cork County Development Plan.

Space may also be a constraint in particular when locating vertical ground source heat pumps and district heating plant.

Locally the burning of plastic in gardens is an issue of concern in relation to air quality

#### **5.6.4 Evolution without implementation of the plan**

Evolution without the plan would see a continued upward trend in the inefficient use of energy in the region and deterioration in air quality as a result of ever increasing combustion emissions. Evolution without the plan would also see a slower uptake of renewable energy technologies sustainable building design.



## 5.7 MATERIAL ASSETS

Within the Macroom area there are a variety of material assets. In general material assets are associated with the;

- Built Environment – (protected structures and archaeological monuments); (discussed under cultural heritage)
- Natural Assets – (quarries and mines, agriculture and forestry, conservation areas; and
- Infrastructure – (roads, telecommunications, wastewater, roads, energy).

It is how these assets are utilised that has the potential to impact on the Environment.

### 5.7.1 Policy

The Macroom Plan has a number of policies that have regard to material assets. The Plan takes into account policies at a national level, regional and local level. Particular reference is made to the National Spatial Strategy (for transport), the Urban Wastewater Treatment Regulations 2001, the Cork Waste Management Plan, the Cork County Development Plan and the Macroom Electoral Local Area Plan.

### 5.7.2 Baseline

#### Water Supply

The Cork Strategic Water Study provides for the upgrading of infrastructural assets and operating systems in order to meet present and future demands within defined level of service standards. The Strategy depends on the implementation of an integrated set of recommendations, which requires coordination between authorities and with the Department of the Environment, Heritage and Local Government. Implementation of the strategy will deliver a secure, high quality water service, sufficient to underpin the socio-economic development of the region over the next 25 years in an environmentally sustainable manner. The major schemes in the study area are shown on Figure 5.7.1 below:

The Cork Strategic Water Study has been completed in response to a joint brief on behalf of Cork County Council and Cork City Council to examine and report on the water supply needs of the South Cork region over the next 25 years. The principal objective of this sanitary programme is to:

- to provide an adequate supply of water, complying with the Irish Drinking Water Regulations, for domestic, industrial, agricultural and other uses; and
- to provide for the safe disposal of sewage and other waterborne wastes.

According to the Cork Strategic Water Study Macroom has an independent water supply to the west of the City with an abstraction from the River Sullane at Macroom. Macroom is part of the Central Region Water Supply area, which comprises of the city and environs of Cork City together with the area immediately west of the city as far as Ballingeary and Coolea and including Macroom. The strategy in this area involves optimising the combined capacity of the Cork Harbour and City and Lee Road works,

recognising the need for security of supply for the major urban conurbation and the critical industrial infrastructure, which forms the backbone of the region's economy.

The existing plant located at the Castle Demesne was provided as an interim scheme in 1996. The plant was designed to cater for a future demand of 3,180 cu. m a day comprising of domestic (52%), industrial (38%), agricultural (6%) and group schemes (6%). The plant operates as a mechanical package plant and therefore is costly to maintain and a replacement plant will be required in the future.

The town's water supply was last upgraded in 1995 and a reservoir was also built thereby trebling the storage capacity for treated water. There appears to be sufficient capacity at present in the system as daily water consumption in the town is circa 1300 cu.m per day however with the projected population growth in the town the current scheme will not be sufficient to meet the needs of the town in the medium-long term due to the capacity and life expectancy of the treatment centre. There are also problems servicing lands above the 120 contour line and it is therefore recommended that all future development be restricted above this line.

In terms of future water supply for the town there is a need to look at a local long-term solution or look at the option of being part of a regional water scheme. The potential of local water springs or wells, as a source of water should be investigated. An additional reservoir may be needed to the north of the town to service the growing population north of the town.

#### **Macroom Sewerage System**

The three components of the current sewerage scheme include the Wastewater Treatment Plant (WWTP), Masseytown Pump Station and the Catchment of the Sewerage. The majority of the existing sewerage system is a combined storm and foul network.

#### **Wastewater Treatment Plant**

The existing wastewater plant is located towards the eastern end of the town on the banks of the River Sullane. The plant currently has capacity for 5,000 PE. The plant capacity has an estimated current load of 5,400 PE which would indicate that the plant is operating above its capacity. One of the major problems presently occurring is the occasional flooding of the plant during flood conditions. The flooding results in the overtopping of the oxidation ditch, settlement tanks and inlet channels, which affects the treatment process as it may take up to three weeks for biological treatment to recover after the flood event. Treated effluent from the Macroom Waste Water Treatment Plant discharges into the River Sullane. In 2006 water quality indicated deterioration.

#### **Masseytown Pump Station**

The station is located on the western bank of the River Sullane. Overflows do occur from this plant during storm events due to inadequate storm storage. Work has been carried out recently to upsize the storm capacity of the pump station.



### **Catchment of Sewerage System**

The catchment for Macroom can be divided into two. The western part of the town gravitates to the Masseytown Pump Station while the eastern part of the town gravitates directly to the wastewater treatment plant located to the eastern part of the town. Flows from Masseytown Pump Station are pumped forward into the eastern catchment from where they gravitate to the wastewater treatment plant. The main part of the sewerage is presently combined however in line with best practice new developments are provided with systems, which reduce the amount of storm water entering the foul sewerage system. The current loadings on the network are 3,100 PE in the western catchment (Pump Station) and 2,300 PE in the eastern catchment giving a total of 5,400 PE.

### **Preliminary Report**

Barry & Partners Consulting Engineers are preparing a preliminary report for the sewerage scheme for Macroom Town Council, which will be published shortly. Recommendations are to include the upgrading of the existing wastewater plant to increase treatment capacity and the provision of additional storage capacity at Masseytown Pump Station where upsized pumps will be required should more development occur in the catchment of this pump station.

### **Municipal Waste**

Municipal Solid Waste (MSW - household and similar waste) accounted for 11% of total waste generated nationally. In 2006 MSW increased by 11% on 2005 figures and a 22% increase on 2002 figures. In 2006 the amount of MSW recovered increased by 18% but landfilling also increased by 8% in the same period. This means that recovery rate for MSW only increased marginally from 34% in 2005 to 36% in 2006.

### **Household Waste**

The amount of household waste managed by local authorities and the waste industry increased by 33% since 2001 and the amount of household waste recovered has increased four-fold since that time, reflecting changes in legislation, policy and improvement in infrastructure.

### **Waste Disposal/Landfill**

In relation to waste disposal, it is noted that the Cork MRF, which is the cornerstone of Waste Management Strategy, is yet to be built; the Bottlehill landfill is non-operational and the Hazardous Waste Incinerator is still not constructed. Landfill capacity in the Cork region, prior to the opening of Bottlehill, is limited to that at Youghal (300,000), which is running below licensed capacity. Rossmore is currently at capacity. Kinsale Road landfill only accepts waste from Cork City Council. Once Bottlehill opens it will have a capacity of 5 Million tonnes with an approximate life of 20 years.

## Facilities

In terms of recycling facilities, there is a Civic Amenity Site located at Codrum, which is owned and operated by Cork County Council. The facility is open six days a week from 09:00 to 16:30 to the general public. The site which operates under a waste licence issued by the EPA accepts a range of material such as glass bottles, beverage cans, food tins, paper & magazines, cardboard, aerosols, containers, WEEE, mobile phones & DIY waste etc. In 2007 some 1776.3 tonnes of residual waste were sent to landfill the figure for 2008 (Jan – April) so far is 899.4 tonnes. Some 2861.2 tonnes of recyclable materials were sent for reprocessing in 2007 and the figure so far for 2008 (Jan-April) is 544.6 tonnes. There are plans to expand the site to facilitate the storage of skips/bulky materials within the confines of the existing EPA issued waste licence and subject to capital funding being made available to further develop the site.

In relation to the collection of household waste, Cork County Council provide an alternate weekly collection service where residual waste and mixed dry recyclables (paper, cardboard, plastic bottles, plastic packaging, food tins and beverage cans) are collected utilising a pay by weight system. There are also two private collectors who provide a similar service in the town on a flat charge system. Country clean collect bins every fortnight (26 collections a year) and Wiser who collects on alternate weeks (52 collections a year)

## Waste-to-Energy

In January 2004 Indaver received planning permission for the construction of Phase 1 of a 100,000tpa €75M incinerator for hazardous waste, including a Waste Transfer Station for hazardous waste, to be located at Ringaskiddy. The development was appealed to An Bord Pleanála who subsequently granted permission subject to 27 conditions in January 2004. In addition, a Waste Licence was granted by the EPA for the facility in November 2005. Judicial reviews were sought by objectors to both EPA and APB decisions.

## Gas Infrastructure

Gas infrastructure is divided between transmission and distribution infrastructure. Transmission infrastructure forms the backbone of the Irish natural gas system and delivers large volumes of gas at high pressures to the main consumption centres, and in special cases, high consumption customers (generally power stations). The distribution network operate at lower pressure and delivers gas to low consumption customers, typically including small businesses and residential customers, in mostly urban areas. There is currently no gas provision in the town at present. According to Bord Gais; Macroom is one of thirty-six towns currently being assessed in terms of the viability of gas provision. The Phase III report will be issued in October 2008.



### Transmission Infrastructure

Currently Bord Gais Éireann (BGE) is the only entity that owns and operates transmission infrastructure in Ireland. However the possibility exists for other entities to build and operate a transmission network, subject to licence by the CER under the Gas (Interim) (Regulation) Act 2002.

### Electricity

The Electricity Regulation Act 1999 liberalised the electricity sector in Ireland. As a result, the electricity market in Ireland is now fully open to competition, in accordance with the requirements of the EU Directives 96/92/EC and 98/30/EC, as of February 19th 2005. Nationally, the electricity network is currently undergoing a major refurbishment program, to continue to 2010. One of the major projects within this programme is the completion of the Medium Voltage Network Renewal Project. This project will see all of Ireland's Medium Voltage overhead electricity network converted to 20kV or refurbished, to ensure a secure, high quality supply with adequate capacity for existing and future loads.

There is sufficient capacity in the network system to cater for both residential, businesses and industry in Macroom Town. Presently the town is serviced by 10 kv lines (medium voltage) while there are plans to upgrade these lines to 20 kv in the near future. Leebridge near Macroom a 38 kv station which serves Macroom and the district will soon be decommissioned and replaced by a 110 kv station (high voltage). There are a number of substations situated around the town which support both residential and industry. Should demand arise from either development or industry a substation will be installed to service that need.

### Transport

Macroom Town Council had a population of 3,407 in the 2006 Census; it also has a considerable tourist population in the summer months of the year. Significant economic growth and a consequent increase in car ownership throughout Ireland in recent years have added to the pressures on existing infrastructure. The most important factor in terms of transport and movement for Macroom is the town's strategic location on the N22 linking Cork City to Killarney and Tralee.

Presently the N22 passes through the centre of Macroom with high volumes of traffic at peak hours causing major traffic bottlenecks and congestion due to the inadequate infrastructure. In addition the existing N22 from Ballyvourney to the west of Macroom has a substandard horizontal alignment where there are tight bends with no overtaking opportunity and forward visibility is restricted by the topography. Within Macroom, the existing route is severely restricted by parked cars and the road narrows at the Town Square to a point that there is insufficient width for a Heavy Goods Vehicle (HGV) and a car to pass. Between Macroom and Lissarda, the hard shoulders narrow and the alignment is bendy with no safe overtaking opportunity. There are a number of minor road accesses along this length of road with substandard junction layouts. Currently there is significant traffic congestion in Macroom Town Centre especially during peak times of the day, weekends and especially during the summer months during peak tourism season.



The need for major improvements to the N22 (Tralee/Killarney/Cork) is referred to in The National Development Plan (2000-2006), which includes for a major investment programme in the national road network in order to provide for continuing sustainable national economic and employment growth.

There are a number of Regional and local routes presently servicing the town such as the R584/R582 linking Dunmanway to Macroom and Millstreet and the R618 to Coachford. Local routes include the Mill Road, Coolyhane Road, Ard Na Greine Road, Chapel Hill, Sleaveen Road, New Road and High Street. Many of these roads are seriously ill-equipped to deal with the high volumes of traffic they receive. The R582 which is heavily trafficked is dangerous in its present state lacking footpaths aligned to poor lighting. The situation is hazardous considering the route runs alongside a number of residential areas. It is considered that long-term improvements are necessary along this route to make the road safer for road users and pedestrians.

#### **Strategic Road Proposals in Macroom Town Development Plan**

A By-pass is proposed for the town, the scheme is currently being designed (June 2008) and is currently awaiting the next stage of the process (compulsory purchase order of lands), The proposed By-pass route has undergone rigorous ecological testing and an EIS is currently being undertaken on the proposed route. It is proposed that the bypass will effectively relieve the town of much of the traffic that it is currently experiencing. This plan seeks to introduce a number of transport objectives that will enable the rejuvenation of the town, enabling it to become the successful commercial area it was previously. This plan proposes the implementation of a number of routes and bridge crossings which will increase connectivity in the town and between the town and existing and proposed residential areas

It is proposed to create two new Pedestrian Bridge Crossings to link the Mill Road to the town centre and the Castle Demense with community facilities north of the river. Pedestrian links would also be formed within the Riverbank Character Area.

It is proposed to create a Masseytown Relief Road, which would connect the residential estates of Gurteenroe and Masseytown and will link in with the proposed Mill Road/ Coolyhane relief road.

It is also proposed to create a number of Backland Access Routes on New Street Masseytown linking the street to the Riverbank Character area and adjacent lands as it was considered that the creation of access points to these lands is vital for mixed use development to occur.

Macroom has been identified as part of the Green Route network with a frequent high quality bus service to Cork being proposed. The implementation of the route should result in fewer car journeys being made in peak hours and a significant shift from car based transport to public transportation. The modal shift to public transportation could be in the order of 30% of all trips made to Cork City. The Cork County Development Plan (2003-2009) includes Macroom as a location for a park and ride site as part of the Green Route Scheme however no specific location within the town has been identified.



### Access to Macroom Town

Significant economic growth and a consequent increase in car ownership throughout Ireland in recent years have added to the pressures on existing infrastructure. Macroom Town is located on the N22, which is a national primary road. A number of Regional and local roads also connect the town with the surrounding hinterland. The town is located approx. 35km west of Cork City and it is approx. 43km east of Killarney Town. The town is accessible via road and air; all routes are listed below in Table 5.7.1. A number of bus services depart from the bus station daily serving Macroom.

### Bus Services

Bus Eireann currently services the town with a number of expressway and local service routes. Macroom forms part of the Cork-Tralee route (Route 40) providing some fourteen hourly services to Tralee and some fifteen hourly services to Cork City on a daily basis. Connections can be made in Cork for a wider range of National and International bus services. The Macroom bus hub also provides a number of local services. Route 257 serves Clondrohid, Route 258 serves Rylane Lower and Route 259 serves Renanirree. These services are very infrequent and only run on certain days of the week. Bus Eireann also provide transportation for school children (400-500) who are dropped and collected at the bus depot in the town. According to Bus Eireann no new destinations or frequency of service is envisaged unless there is increased demand. There is however a need for more services into the Metropolitan Cork area especially at peak times. Presently there are only two bus services to Cork City before 9 am. This is a disincentive to commuters travelling to work as the current times are inflexible and certainly do not encourage residents to leave their car at home.

Table 5.7.1 Accessibility to Macroom Town

Road Network	Transport Network
<b>National Primary</b>	N22: Cork – Ballincollig – Macroom – Killarney - Tralee
<b>National Secondary</b>	N71: Cork – Bandon – Macroom – Skibbereen – Bantry – Kenmare – Macroom – Mallow -
<b>Rail Network</b>	Kent Station, Cork City (43km) - Kerry, Dublin. Killarney Railway Station, Killarney (46km) – Cork – Dublin – Limerick.
<b>Air</b>	Cork International Airport (42km)
<b>Bus</b>	Cork-Tralee route (Route 40) Clondrohid (Route 257) Rylane Lower (Route 258) Renanirree (Route 259)

### 5.7.3 Impact assessment – existing environmental problems and constraints

**Transport** – The Cork Area Strategic Plan Update 2008, the County Development Plan 2009 and the Macroom Development Plan (2009 – 2015) contain varying policies with a view to improving and upgrading the existing transport infrastructure within the Macroom area.

The Macroom Development Plan looks at the needs of the region in a way that integrates land use and transport concerns, is firmly evidence-based, and generally reflects well against standards of international best practice.

Presently the N22 passes through the centre of Macroom with high volumes of traffic at peak hours causing major traffic congestion due to the inadequate infrastructure. Therefore a new Macroom Bypass running from the Hartnett Cross area travelling north of the town and west to the Carrigaphooca area is proposed. The Plan states that the Macroom bypass is the most important development proposed in terms of transport infrastructure. The project proposed by the National Roads Authority and Cork County Council is for a two-lane by-pass. An EIS is currently being undertaken on the proposed route therefore it is considered that any potential impacts will be highlighted and mitigated against through the implementation of Environmental Impact Assessment (EIS). A 100 metre wide corridor has been agreed for this route. Other constraints within the study area include congestion within the Town Centre especially during the summer months, lack of cycle routes and parking.

The aim for Macroom Town is to grow in a compact and sustainable manner. One of the key objectives is therefore to encourage continued growth in employment and services in the town. However if the town is to continue to grow and prosper its transportation linkages to other economic nodes need to be significantly improved.

**Wastewater Treatment-** The existing wastewater plant is currently at capacity and the area is prone to occasional flooding. The Masseytown Pump Station located on the western bank of the River Sullane is also prone to overflows during storm events due to inadequate storm storage, however work has been carried out recently to upsize the storm capacity of the pump station. It is proposed to upgrade the wastewater treatment plant for the area, Barry & Partners Consulting Engineers are preparing a preliminary report for the sewerage scheme for Macroom Town Council which will be August 2008. Recommendations are to include the upgrading of the existing wastewater plant to increase treatment capacity and the provision of additional storage capacity at Masseytown Pump Station where upsized pumps will be required should more development occur in the catchment of this pump station.



**Water Supply** - At present there is adequate water supply in the town. However there is not sufficient water supply for the town in terms of the towns population projections for the Macroom Town Development Plan 2009 – 2015. Therefore there are long-term water capacity issues within the town. The development plan also highlights that an additional reservoir may be needed to the north of the town to service the growing population north of the town.

#### **5.7.4 Evolution without implementation of the plan.**

In the absence of the Town Development Plan specific transport objectives would still be provided through the County Development Plan. However the town plan provides a guidance that specifically relates to transport infrastructure within the Macroom area.

The Development Plan seeks to encourage a more sustainable attitude to transport and travel in the longer term. At present the high volumes of traffic passing through the town restrict the cycling or walking amenity at present, therefore it is an objective of the plan to create dedicated lanes and paths for pedestrians and cyclists and a new bypass for the town. Therefore in the absence of the Macroom Town Development Plan 2009 – 2015 s likely that the town would become even more congested, causing increased air and noise pollution within the town centre. Without the plan it is likely that additional public transportation facilities, cycling facilities, pedestrian amenities and parking facilities would not be provided. Without these integral features of the plan the transport situation within the town itself would deteriorate as increased volumes of traffic over time were using the same routes that may presently be at or near capacity.

**Water Supply and Wastewater** - Without implementing the plan there would be little change to wastewater and water supply policies and objectives. There would not be an objective to Support the expansion of the existing Wastewater Treatment and storage. Without the plan development would continue without wastewater provision, potentially causing overflows and pollution in the area.

## 5.8 CULTURAL HERITAGE

This section of the SEA establishes Macroom Town Council's objectives and policies for the protection, conservation and enhancement of Macroom's architectural and archaeological heritage. The jurisdiction of the Macroom Town Development Plan 2009-2015 encompasses an important area in terms of architectural merit and archaeological heritage. Urban development has increased significantly in recent years placing the archaeological heritage of the town under increasing threat.

### 5.8.1 Policy

There are a number of specific planning policies and objectives in the Macroom Development Plan 2009 to 2015 to retain and improve those structures, buildings and streetscapes within the town which significantly add to the uniqueness of Macroom's urban landscape and to the amenity value of the town. The Plan also refers to national, regional and local plans including the Cork County Development Plan 2003 and Cork County Development Plan 2009.

### 5.8.2 Baseline

Cultural heritage includes inherited artifacts and intangible attributes that are inherited from past generations, maintained and bestowed for the benefit of future generations. The protection of heritage not only has environmental benefits and benefits for the quality of the people of Macroom, but it also brings economic benefits to the County by providing attractive towns, villages and countryside for visitors to enjoy.

#### National Monuments - Archaeological Sites and Monuments in State Ownership

National Monuments are monuments that are in state ownership, state guardianship, under preservation orders and/or temporary preservation orders and/or under local authority ownership.

#### Record of Protected Structures

There are a number of structures listed for protection in the Record of Protected Structures (Macroom Development Plan, 2009). These structures range from shops, bars, post offices and houses.

In addition to the Record of Protected Structures, structures of architectural heritage merit, although not put forward for inclusion in the Record of Protected Structures (RPS) may continue to contribute to the identity of a locality and should be taken into account in the preparation of the Development Plan. The Macroom area is unique in form and character. It is an objective to seek the identification and protection of all structures within the town that are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Such structures include but are not exclusive to the Record of Protected Structures. The distribution of the Record of Protected Structures throughout



Macroom are currently not documented in the Macroom Town Development Plan 2009 – 2015, however photographs of the RPS's and proposed RPS's are included in Appendix B and C.

The Record of Protected Structures is a list of the structures that constitute the Macroom Town Record of Protected Structures and are indicated in Appendix B and their location is indicated on the associated mapping within the Macroom Town Development Plan 2009 – 2015. The list of proposed Record of Protected Structures is located in Appendix C of the Macroom Town Plan also.

### **Architectural Heritage**

The term "architectural heritage" is defined in the Architectural Heritage (National Inventory) & Historic Monuments Act, 1999 as meaning all:

- a) Structures and buildings together with their settings and attendant grounds fixtures and fittings;
- b) Groups of such structures and buildings, and Sites; and
- c) Which are of architectural, historical, archaeological, artistic, scientific, social or technical interest.

### **Architectural Conservation Areas (ACA's)**

The built heritage of County Cork and Macroom town is also offered protection through the designation of Architectural Conservation Areas (ACAs). Most of the Town Centre of Macroom is designated as an ACA. It extends from New Street to the Bus Depot and takes in the areas of Masseytown, Castle Street, Market Square, North Square, South Square, Sleveen Lane, and Main Street. An ACA is a place, area, group of structures or townscape, taking account of building lines and heights, that is of special architectural, historical, archaeological, artistic, cultural scientific, social or technical interest or that contributes to the appreciation of a Protected Structure, and whose character is an objective of a development plan to preserve.

In addition to the policy of the plan Architectural Conservation Areas are protected by legislation may be used to protect the following:

- Groups of structures of distinctiveness or visual richness or historical importance;
- The setting and exterior appearance that are of special interest, but the interiors of which do not merit protection;
- The setting of a Protected Structure where this is more extensive than its cartilage;
- Designed landscapes where these contain groups of structures as in, for example urban parks, the former demesnes of country houses and groupings of archaeological or industrial remains; and
- Groups of structures, which form, dispersed but unified entities but which are not with in the attendant grounds of a single dominant Protected Structure.

### **Archaeological Heritage**

Archaeological heritage is a resource, which can be used to gain knowledge and understanding of the past and is therefore of great cultural and scientific interest. Archaeological heritage ranges from sites, features and objects of archaeological interest.

The Minister for the Environment and Local Government is responsible for the protection of archaeological heritage, including the licensing of archaeological excavations, through the exercise of powers under the National Monuments Acts 1930 to 2004.

There are a number of categories of monuments under the National Monuments Acts

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

The Archaeological Survey of Ireland (ASI) compiles the record of all archaeological monuments in the State and is responsible for the publication of Archaeological Inventories. The Record of Monuments and Places is compiled by The ASI and comprises lists and maps of all monuments with known locations.

It should be noted that any direct impacts on national monuments in State or Local Authority care or subject to a preservation order will require the consent of the Minister for the Environment, Heritage and Local Government under Section 14 of the National Monuments Act 1930 as amended by Section 5 of the National Monuments (Amendment) Act 2004.

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

The National Monuments (Amendment) Act 1994 made provision for the compilation of a record of all known monuments in the County - The Record of Monuments and Places (RMP). The Record of Monuments and Places consists of a set of maps on which all the archaeological sites in the county known to the Minister in 1997 were marked. It is accompanied by a manual, which contains a descriptive listing of each site. All the sites marked on the RMP maps are protected under section 12 of the National Monuments (Amendment) Act 1994. As new features and monuments are discovered due to research and development driven archaeological assessment, monitoring, testing and excavation a second layer of monuments not yet included in the RMP is created.

Copies of the Record of Monuments & Places maps and accompanying manual can be viewed at the Cork County Library, Model Business Park, Model Farm Road, Cork and at the Macroom Town Library, Macroom.



Macroom Town has a diverse range of monuments ranging from a number of historic eras. Monuments within the area include souterrains, fulacht fia, ringforts, standing stones, holy wells and graveyards. There are a number of monuments and places recorded within the boundaries of Macroom Town. It is deemed that the Plan area is of high archaeological potential due to the potential for the presence of hitherto unknown sub-surface archaeological remains. This determination is based on the presence of substantial archaeological remains from many periods of the past within the Town Council area.

### **Tree Preservation Orders**

In accordance with Section 205 of the Planning & Development Act (2000) it should be a policy of the Council to ensure that the existing trees in the town are retained and protected by means of Tree Preservation Orders within the Macroom Development Plan 2009 - 2015.

Currently there are two tree preservation orders in the Macroom Town Development Plan 2009 – 2015. Policy NE3 proposes to secure Tree Preservation Orders for the following:

- Mature woodland north of the ruins of Codrum House
- Mature woodland east of the ruins of Mount Hedges

In addition Policy NEP6 encourages the protection of significant trees, tree groups, woodlands and hedgerows in Macroom as identified on the Environmental Parameters Map.

### **Industrial Heritage**

Ireland's industrial heritage is being changed and destroyed at an unknown rate. Over the past decade there has been a growing public awareness of Ireland's industrial heritage, as seen in a number of sites which have been restored by enthusiasts and are now open to the public as tourist and educational attractions. Although there is now official recognition of the importance of the industrial heritage of Ireland, statutory protection is still low, due in the main to a backlog of listing of heritage structures.

Mount Massey is an estate located to the north west of the town. The Massey's family were largely responsible for the planning and development of Masseytown. This planned suburb was designed to accommodate the courthouse, barracks, new housing as well as manufacturing such as milling, textiles and tanning. It also had its own fair green. Today, many of the buildings are still standing. Although some, such as the barracks, perform their original function, others such as the mill buildings are no longer in use, yet continue to make a strong contribution to the character of the area.

### **Gaeltacht Areas**

There are no Gaeltacht areas in Macroom, however the Muskerry Gaeltacht is located just outside the town of Macroom.

### **5.8.3 Impact assessment –existing environmental problems and constraints**

Developments or works which occur in close proximity to archaeological monuments would have potential to impact existing archaeological monuments through disturbance or destruction of the monuments. New developments that are adjacent to and/or alterations/extensions to existing protected structures also need to be carefully managed to ensure that the cultural heritage of such areas are not disturbed or negatively impacted upon.

It is deemed that the Plan area is of high archaeological potential. This determination is based on the presence of substantial archaeological remains from many periods of the past within the development area.

Most of the Macroom Development Plan maps do not cover the whole Macroom Urban District area and only cover the Town Centre Development Boundary, therefore the location of RMP's, RPS's and other important elements of cultural heritage are not documented in the plan.

### **5.8.4 Evolution without implementation of the plan**

In the absence of the Plan specific objectives would still be provided through the Cork County Development Plan and National Legislation. However the Macroom Development Plan provides a guidance that encompasses principles from the Cork County Development Plan and the national legislation and is therefore more applicable to the area of Macroom.

If the plan were not implemented there would not be any local guidance, policies or objectives to protect and conserve archaeological sites, protected structures, trees of merit, Architectural Conservation Areas and buildings and sites of Architectural merit. Therefore these features of special architectural, historical, archaeological, artistic, cultural, social or technical interest could be damaged or even lost in some cases.



## 5.9 LANDSCAPE

Macroom contains significant areas of landscape importance, which are important not only for their intrinsic value as places of natural beauty but also because they provide a real asset for residents and visitors alike in terms of recreation, tourism and other uses. The importance of landscape is recognised in the Planning and Development Act 2000, which requires that Development Plans include objectives for the preservation of the landscape, views and prospects and the amenities of places and features of natural beauty.

### 5.9.1 Policy

There are a number of specific planning policies and objectives in the 2009 to 2015 Macroom Development Plan to protect features of Landscape and Natural Heritage importance which significantly add to the uniqueness of Macroom's landscape and to the amenity value of the town. The Plan also refers to national, regional and local plans including the Cork County Development Plan 2009.

### 5.9.2 Baseline

Landscape character is a distinct area of landscape that is relatively homogeneous in character. Each character represents its own landscape values and sensitivities. The character specified for a study area is generally a descriptive term made up of the prominent landform and land cover.

The town presents a mixture of naturally occurring and manmade features, which in terms of development present both opportunities and constraints. This Development Plan promotes the protection of key landscape features and advocates where appropriate their use for amenity purposes.

The strong linear profile of Macroom is perhaps its most discernable physical attribute. It is intersected by the River Sullane, which runs underneath a fine stone bridge of ten arches, located to the west of the town. The town of Macroom sits in a valley, surrounded by steep hills to the north and south. The elevated nature of much of the surrounding land resulted in the town evolving on an east-west lineal basis. The presence of the railway line from 1866 to the 1950's also influenced the physical development of the town, reinforcing its linear pattern.

According to the draft Cork County Council Landscape Strategy the landscape of Macroom town is of high value and of county importance. The landscape in this area is also of high value in terms of sensitivity.

#### Landscape Types

The Macroom Town Council landscape type comprises primarily of Valley Marginal Middle ground and partially of Hilly River and Reservoir Valley to the southwest by the Gearagh. In terms of landscape character Macroom is considered to comprise primarily of Broad Middle Valley of Semi-Rugged Mosaic Hills and Rock and partially of Alluvial Flood Plain and Reservoir in Patchwork Valley to the south west of the town at the edge of The Gearagh. Much of the north and south of the town is elevated and parts

of the town to the west and south west is designated as scenic landscape in the Cork County Development 2003, there are also vast areas of trees, protected trees and hedgerows surrounding the town.

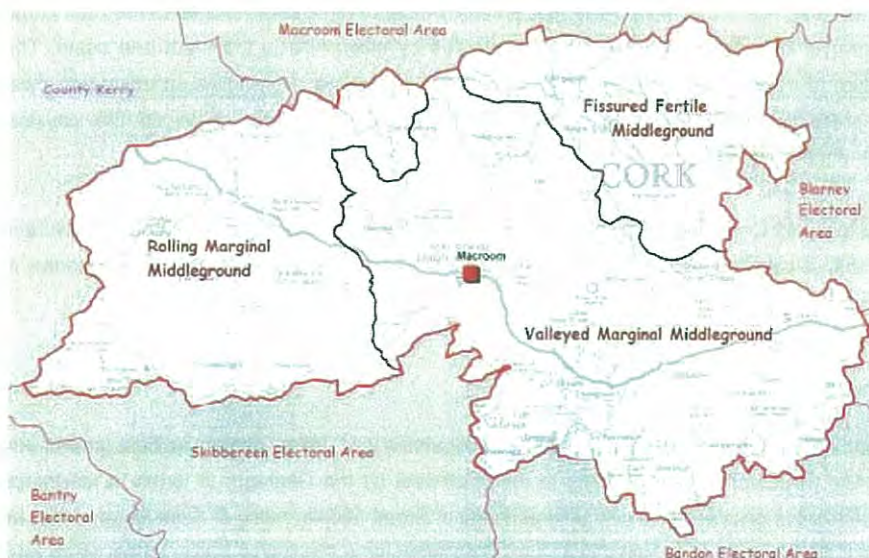
#### Valley Marginal Middle Ground (Macroom Town and Surrounds)

This landscape type is found between Ballyvourney and Macroom. Topographically this landscape comprises low rounded hills of old red sandstone enclosing fairly broad undulating river valleys. The rivers in this area are the middle to upper levels of the River Lee and Sullane River before they join together as the River Lee. Small to medium sized fields are of marginal quality consisting of uncultivated peaty soils, and include clumps of willow, birch, heather, bracken, the occasional rock outcrop and are bounded by low broadleaf hedgerows. Coniferous plantations are mostly located on higher ground. Dwellings, farmsteads and sheds are interspersed across the landscape and are generally well screened by hedgerows

#### Hilly River and Reservoir Valleys (The Gearagh)

This landscape type comprises a relatively confined area of land stretching between the Gearagh in the west to Iniscarra in the east. Topographically the landscape includes interweaving hills and valleys, contained by low ridges and interlocking hills, resulting in a meandering course for the River Lee, which expands and contracts between hydroelectric dams. Landcover pattern comprises regular shaped fields of medium size, bounded by broadleaf hedgerows. Given that the soils are generally of moderate fertility, landuse comprises mostly pasture. The Gearagh is used as a popular amenity for walking and is protected for its wildlife value.

Figure 5.9.1 Macroom Landscape Type



Source: Macroom Electoral Local Area Plan 2005



## Values

### Valley Marginal Middle Ground (Macroom Town and Surrounds)

This landscape is valued locally for its ecological habitats and in terms of scenic amenity, including its broadleaf woodlands, the quality of its built heritage, and the mix of fertile river areas and upland areas. The land is valued locally for agriculture, while the more marginal upland areas are used particularly for commercial forestry. Due mainly to its attractive environment and proximity to large centres of population, the area is also valued locally as a place to live.

### Hilly River and Reservoir Valleys (The Gearagh)

This landscape type contains the Gearagh, which is an internationally important heritage site, as it supports the most extensive alluvial woodland in Western Europe. In addition to the above, this landscape is valued nationally as an important tourist location, due mainly to the quality of its natural heritage, its scenic and recreational amenities, and due to its strategic location between Cork and Killarney. In County Cork, the Lee Valley has particular significance for its scenic amenity, identity and the recreational importance of the area. This area also provides an important regional supply of energy and water, while its agricultural land is important to the local economy.

## Sensitivity

The town is physically constrained by the steep hills located to the north and south of the town with contours rising 160 metres in places while the river Sullane which flows through the town while constraining development acts as an important amenity for the town. There are a number of significant stream corridors in the plan area (see Environmental Parameters Map within the Town Development Plan), which flow, north south and empty into the river Sullane which should be kept free from development. The introduction of green buffer zones should be considered alongside these streams in order to provide Sustainable Urban Drainage System, maintain ecological corridors and create areas of open space.

The Macroom area is also rich in mature tree groups with a number of important broad-leaved plantations surrounding the town. These tree groups form very important natural habitats while at the same time providing invaluable recreational amenities. In terms of manmade features the line of the proposed Macroom bypass certainly restricts the development potential of the lands to the north of the town. The creation of a buffer zone approximately 800 metres on either side is advocated by the National Roads Authority. The bypass is however crucial to the town in terms of alleviating the severe traffic congestion the town is currently experiencing. Access to back lands especially in the Town Centre and Masseytown is also restricting the development potential of these lands. The Development Plan acknowledges the complexity of these issues and seeks to address these issues through appropriate land use zonings and development objectives.

The Gearagh which is located 1 km south of Macroom Town Centre, partly within the Town boundary is designated as a cSAC and SPA and therefore would be governed by European Communities (Natural Habitats) Regulations 1997, which is European Union legislation on the environment and should be conserved from any potential visual impacts from development within the town boundary.

#### Scenic routes and views

**Scenic Views** - The elevated nature of the surrounding lands means that there is an abundance of scenic views in Macroom. The River Sullane and the Gearagh, as well as the many areas of woodland, act as important components in the many views to be seen in Macroom and the surrounding landscape. A number of important views have been identified on the Objectives Map. It will be an objective of this plan to ensure that they are protected.

- **View 1:** From the townland of Gurteenroe, southwards towards the western end of Macroom town, and further south to Macroom Castle demesne.
- **View 2:** From the townland of Lackaduff, northwards towards Macroom Castle demesne and further north to Masseytown and Gurteenroe.
- **View 3:** From the townland of Sleveen West, southwards towards the Gearagh.
- **View 4:** From the townland of Sleveen West, northwards into the eastern end of Macroom town, and further north to the townlands of Firville and Bealick.

**Scenic Routes** - make up those areas of natural beauty and the important views and prospects that people in Cork (and visitors to the county) value most highly. There are two scenic routes located in close proximity to the town, these include Scenic Route A38 and A26 as outlined in the Cork County Development Plan 2003 (SA38 and A26 Scenic Routes in the Cork County Development Plan 2009).

### 5.9.3 Assessment – existing environmental problems and constraints

It is considered that much of the lands surrounding the town are of high landscape character. Elevated lands to the north and south of the town are sensitive to development. Lands to the east and south east of Macroom town are designated as Scenic Landscape in the Cork County Development Plan 2003 and Cork County Development Plan 2009. Two scenic routes are located in close proximity to the town and there are also a number of locally important views as outlined above. In addition The Gearagh is located to the south west of the town and is designated as a cSAC and SPA.

### 5.9.4 Evolution without implementation of the plan

In the absence of the Plan specific objectives would be still be provided through the Cork County Development Plan and National and European Legislation. However the Macroom Development Plan provides a guidance that encompasses principles from the Cork County Development Plan and the national legislation and is therefore more applicable to the area of Macroom.



If the plan were not implemented lands within the town would not be zoned and it is likely that development would take place in an ad hoc, haphazard manner. It is likely that that development would take place on scenic landscapes and important vistas of the town. Therefore features of landscape value could be damaged or even lost in some cases.

## 6 OBJECTIVES, TARGETS AND INDICATORS

The sustainability criteria are broadly categorized in terms of the indicators outlined in the SEA Directive and in the SEA of the Cork County Development Plan 2009-2015. In the course of carrying out the appraisal, the sustainability criteria were refined, combined and classified in order to avoid duplication and ensure a clear, focused and measurable set of criteria against which the strategy can be assessed. Set out in Table 6.1 are the draft SEA Objectives that are being considered to test the Macroom Development Plan. These objectives are based on the current understanding of the key environmental issues identified at a local level in Macroom and at a county level.

**Table 6.1 SEA Objectives Targets and Indicators**

Issue	Objective	Target	Indicator	Responsibility
<b>Biodiversity, Flora and Fauna</b>				
B1	To avoid significant adverse impacts (direct, cumulative and indirect), to protected habitats, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites.	No significant adverse impacts, (direct, cumulative and indirect impacts), to relevant habitats, species or their sustaining resources in designated ecological sites.	Number of significant adverse impacts (direct, cumulative and indirect impacts), to relevant habitats and species in designated ecological sites.	MTC DoEHLG
B2	To protect the marine environment, aquatic biodiversity, flora and fauna and to promote management strategies.	No significant adverse impacts, (direct, cumulative and indirect impacts), to relevant habitats, species or their sustaining resources in designated ecological sites.	Number of significant adverse impacts (direct, cumulative and indirect impacts), to relevant habitats and species in designated ecological sites.	MTC DoEHLG



Issue	Objective	Target	Indicator	Responsibility
<b>Population and Human Health</b>				
PH1	To improve the quality of life for the people of Macroom through high quality residential, working and recreational environments, sustainable travel patterns.	To improve quality of life, provision of improved physical and social infrastructure, to reduce journey to work times and allow for a better match between place of residence and place of work.	Journey to work times.	CCC
PH2	To protect human health from hazards or nuisances arising from traffic and incompatible landuses.	No spatial concentrations of health problems arising from environmental factors.	Occurrence of a spatially concentrated deterioration in human health.	MTC/CCC
<b>Soils</b>				
S1	To maximise the sustainable re-use of brownfield lands and the existing built environment, rather than developing greenfield lands.	All brownfield lands to be redeveloped at the end of the plan lifespan (subject to availability on the open market and demand for such land).	Area of brownfield land available.	MTC
S2	To maintain the quality of soils.	To reduce contamination and safeguard soil quality and quantity.	Cannot specifically monitor at present, however, when soil directive comes into force, will be obliged to consider impacts of policies on soils.	CCC
S3	To minimise waste production and reduce the volume of waste to landfill and to operate sustainable waste management practices.	To meet national and EU targets on the recycling of municipal waste and its diversion from landfill.	Volume of waste recycled and volume of waste sent to landfill.	MTC/CCC
<b>Water</b>				
W1i	Maintain or improve the quality of surface water to meet the	0 Faecal Coliform Counts per 100ml of groundwater.	Faecal Coliform Counts per 100ml of groundwater.	EPA MTC/CCC

Issue	Objective	Target	Indicator	Responsibility
W1ii	requirements of the South Western River Basin Management Plan (SW RBMP) and Programme of Measures (POMs)	To improve biotic quality ratings, where possible to Q5.	Changes in water quality as identified during water quality monitoring programmes.	EPA MTC/CCC
W2i	To maintain and improve, where possible, the quality of rivers, lakes and surface water.	To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015.	Biotic Quality Rating (Q Value) and Risk Assessment.	EPA MTC/CCC
W2ii		To improve biotic quality ratings, where possible, to Q5.	Biotic Quality Rating (Q Value) and Risk Assessment.	EPA MTC/CCC
W3	To maintain and improve where possible, the quality of estuarine and coastal waters.	To maintain or to improve trophic status, where relevant, to unpolluted in line with the requirement to achieve good water status under the Water Framework Directive, by 2015.	Trophic Status (ATSEBI)	EPA MTC/CCC
W4a	To prevent pollution and contamination of bathing water.	≤ 5,000 Total Coliform Counts per 100ml of bathing water.	Total Coliform Counts per 100ml of bathing water.	MTC
W4b		≤ 1,000 Faecal Coliform Counts per 100ml of bathing water.	Faecal Coliform Counts per 100ml of bathing water.	EPA CCC
<b>Air and Climate</b>				
A 1	To maintain and improve air quality in Macroon	Maintain or improve levels of ambient SO <sub>2</sub> , NO <sub>x</sub> and particulate matter	Air quality standards of SO <sub>2</sub> , NO <sub>x</sub> and PM <sub>10</sub>	MTC/CCC



Issue	Objective	Target	Indicator	Responsibility
<b>Energy</b>				
E1	Use of renewable energy technology for projected power requirements over the lifetime of the Plan	Encourage use of renewable energy for domestic and small businesses. Use of renewable energy to supply National Grid where applicable	Number and type of renewable energy technologies employed in new developments	MTC/CCC
<b>Material Assets</b>				
M1	To serve new development under the plan with appropriate wastewater treatment.	No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the plan.	Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the plan.	CCC NRA
M2	To maintain and improve the quality of drinking water supplies.	To maintain and improve drinking water quality in Macroon to comply with the requirements of the European Communities (Drinking Water) Regulations 2000.	Drinking water quality standards (Microbiological, Chemical and Indicator parameters).	EPA MTC/CCC
<b>Cultural Heritage</b>				
CH1	To protect the archaeological heritage of Macroon and; the context of the above within the surrounding landscape where relevant.	No unauthorised developments permitted over the lifespan of the plan which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the	Number of unauthorised developments permitted over the lifespan of the plan which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding	CCC Heritage Section Cork Heritage Forum DoEHLG

Issue	Objective	Target	Indicator	Responsibility
		surrounding landscape where relevant.	landscape where relevant.	
CH2	To preserve and protect the special interest and character of Macroom 's architectural heritage and the context of the above within the surrounding landscape where relevant.	No unauthorised developments permitted over the lifespan of the plan which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.	Number of unauthorised developments permitted over the lifespan of the plan which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.	CCC Heritage Section Cork Heritage Forum DoEHLG
<b>Landscape</b>				
Li	To protect Macroom 's sensitive landscapes, landscape features and designated scenic routes and landscape	No unauthorised developments to be conspicuously located within sensitive landscapes or designated scenic landscape.	Number of unauthorised conspicuous developments located within sensitive landscapes or designated scenic landscape.	MTC/CCC
Lii		No unauthorised developments to adversely impact upon designated scenic views or scenic landscape.	Number of unauthorised conspicuous developments adversely impacting upon designated scenic views or scenic landscape.	MTC/CCC



## 7 ASSESSMENT OF ALTERNATIVES

### 7.1 INTRODUCTION

Article 5 of the SEA Directive requires the environmental report to consider 'reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme' and the significant effects of the alternatives selected. Alternatives must be realistic and capable of implementation and should present a range of different approaches within the statutory and operational requirements of the Town Plan.

Section 3.14 of the DoEHLG Guidelines notes that the higher the level of the plan, the more strategic the options which are likely to be available. Conversely, lower tier plans, such as Local Area Plans, will be framed in a policy context set by the level(s) above them, and strategic options may be limited. As a result, the strategic options available to the preparation of the Draft Macroom Development Plan are limited.

It is a mandatory objective of a Development Plan that sufficient lands are zoned for particular purposes. This is especially relevant in relation to the quantum and location of new residentially zoned lands. In this regard it is important to highlight that sufficient lands are proposed to be rezoned for residential, employment and community uses within the town boundary in line with national, regional and local population projections, which will contribute to the generation of critical mass within the town of Macroom.

Macroom Town Council is vast in its extent and only a small area of the town is currently developed. Currently Macroom Town Centre is bounded by way of a development boundary in order to promote development within the town development boundary rather than in the rural areas of the town. A number of development alternatives were available in the preparation of the draft Macroom Town Development Plan. Options included the do-nothing scenario by leaving the town to develop in its current situation, the option of rezoning lands within the town centre in order to consolidate the town, while also allowing an element of greenfield rezoning and another option was to allow expansion of the town through the rezoning of greenfield lands outside of the town centre.

- **Option 1**            The 'Do-nothing' option;
- **Option 2**            Rezone sufficient lands in accordance with national, Regional and Local projections; and
- **Option 3**            Extend new development zonings wholly on Greenfield lands

Under **Option 1** the 'do nothing' scenario, Macroom would maintain its current physical and socio-economic characteristics. Development would be market dependent and would occur at a slower pace and in a less co-ordinated manner. Adopting the 'do-nothing' approach would have serious implications for the proper planning and sustainability of Macroom Town, as it would mean development would take place in a haphazard manner.

As a result of the do-nothing approach, policies and objectives of the plan would not be updated and therefore derelict and under-utilised buildings would dilapidate further. Physical, social and economic development would not be planned and promoted within the town. Therefore Option 1 would not achieve the aim of the Macroom Town Development Plan, which is to 'grow in a compact and sustainable manner'. Therefore this option is considered negative in terms of the environment and sustainability of Macroom and is therefore not the chosen option for the plan.

Alternative **Option 2** is to rezone sufficient lands in accordance with national, Regional and Local projections through the intensification and consolidation of the existing Town Centre, redeveloping brownfield sites and Greenfield sites only where there is a natural extension to existing zoning.

This scenario allows for the intensification of the town centre and the consolidation and expansion of existing services to accessible lands. This scenario would meet a large number of the objectives of the Town Development Plan, as it would allow the rejuvenation of existing derelict sites, which would improve the town's architectural character and townscape and consequently improve its tourist function. It would also be likely to have a positive impact on existing residents and traders in the town. Therefore Option 2 is the preferred option for the Macroom Town Development Plan 2009 - 2015.

Alternative **Option 3** would be to extend new development zonings wholly on greenfield lands outside the town centre. Much of the greenfield lands to the north and south of the town is highly elevated and much of the greenfield lands within the town centre is designated open space and/or acts as a protective buffer between the town and the Sullane River. Therefore this option would involve extending zonings into the greenfield areas of the Town that is considered to be of high landscape character. Therefore this option would allow development to extend rather than to consolidate and is not considered to be sustainable. Therefore Option 3 is considered unsustainable due to the dispersed nature of growth and primarily due to its potential to have an impact on these areas.



## 7.2 ASSESSMENT OF OPTIONS

Table 7.2.1 below provides a description of the criteria used to assess the various environmental SEA topics against the proposed alternative.

Table 7.2.1 Scoring Symbol for the Purpose of Assessment of Alternatives

Impact	Negative	Negative indirect	Neutral	Positive (direct)	Positive (indirect)	Uncertain/Questionable
Symbol	x	⊗	0	✓	⊠	?

### Option 1- The “do-nothing” Option

Under the “do nothing” option, the Area would maintain its current physical and socio-economic characteristics. Development would be market dependent and would most likely occur at a slower pace and in an uncoordinated manner and in a haphazard approach, as the development plan principles would no longer apply.

Adopting the “do nothing” scenario would mean that parts of the area would remain derelict and under utilised with little physical, social or economic enhancement.

Implementation of Option 1 would not achieve the aim of the Macroom Town Development Plan, which is to ‘grow in a compact and sustainable manner’. Therefore this option is considered negative in terms of the environment and sustainability of Macroom and is therefore not the chosen option for the plan. An overview of impacts by considering the “do nothing” scenario is provided below in Table 7.2.2.

Table 7.2.2: Option 1 the ‘Do-nothing’ Option

Environmental Issue	Score	Commentary
Biodiversity	x	May result in pressures to the Sullane River and The Gearagh cSAC, pNHA and SPA due to unplanned growth. Possible loss of hedgerows, tree lines and potentially sensitive habitats but not on a significant scale.
Population and Human Health	0	Under this scenario there would be a continuing reliance on private transport as development would be of an unplanned nature which would result in greater exposure to noise and air pollution.
Water	x	Uncontrolled development could place pressure on surface water and on groundwater quality. Uncontrolled development within the town is likely to have negative impacts to the Sullane River and may have indirect impacts on the Gearagh. In addition development near the river and the Gearagh could cause pollution and could affect recreational fishing opportunities with a slight negative impact on water quality.
Soil	x	Unplanned development within the area could potentially result in the loss of fertile soils/resources but not on any significant scale.
Air & Climate	x	Under this scenario there is no planned provisions for the facilitation of a green fabric and therefore there would be a greater reliance on the private car rather than cycleways and pedestrian links resulting in increased CO <sub>2</sub> emissions and negative impacts to air quality and climate
Material Assets	x	This option could result in a number of one off septic tanks, connections to ESB rather than a planned and phased approach. Access to services and public facilities would not



Environmental Issue	Score	Commentary
		be planned under this scenario. It would result in the continued unsustainable development of one-off and ribbon housing along minor roads
Cultural Heritage	✘	There could be impacts on the recorded monuments and places sites and protected structures within the area as a consequence of this option. Given the overall high archaeological potential of the plan area sub-surface remains may be encountered and thereby impacted upon. Also under the do-nothing option, the plan would not designate new Architectural Conservation Areas (ACAs) or Tree Protection Orders (TPOs) and therefore it is possible that the special features of the ACAs and Trees of high landscape, amenity and/or ecological value could be lost or degraded.
Landscape	✘	Unformulated development in the town may result in impacts on the protected views and may have negative impacts on the landscape.
Traffic	✘	Unplanned development is likely to result in dispersed development, which would increase the need and dependency upon private means of transport leading to traffic congestion and delays and pressure on the existing road network.

#### Option 2- Rezone sufficient lands in accordance with national, Regional and Local projections

Alternative Option 2 is to rezone sufficient lands in accordance with national, Regional and Local projections through the intensification of the existing Town Centre, redeveloping brownfield sites and Greenfield sites only where there is a natural extension to existing zonings. It is expected that future population growth in Macroom will be accommodated through a pattern of consolidation with an emphasis on infill development and the development of outer edge sites to the southeast, southwest and northwest of the town. It is considered that this option allows sufficient lands to be zoned within this plan to accommodate the projected population growth within the six-year plan period.

This scenario allows for the intensification of the town centre and the consolidation and expansion of the urban centre of the town. This option allows the sustainable extension of existing services to easily accessible lands.

This scenario would meet a large number of the objectives of the Town Development Plan, as it would allow the rejuvenation of existing derelict sites, which would improve the town's architectural character and townscape and consequently improve its tourist function. It would also be likely to have a positive impact on existing residents and traders in the town.

**Table 7.2.3: Rezone sufficient lands in accordance with national, Regional and Local projections**

Environmental Issue	Score	Commentary
Biodiversity	0	The intensification of the Town centre and redeveloping brownfield sites and Greenfield sites only where there is a natural extension to existing zonings would have a neutral effect on biodiversity as it would reduce impacts to greenfield areas and wildlife corridors outside the town, as well as any protected SPAs, SACs and pNHAs. Further expansion of Macroom Town centre and redevelopment of brownfield sites would have a neutral effect on flora and fauna as it would reduce impacts on greenfield areas and wildlife corridors outside the town, as well as any protected SPAs, SACs and pNHAs.
Population and Human Health	✓	It promotes greater use of public transport due to the intensification of the town centre and promotion of development on lands, which have been zoned in a planned manner. This option promotes growth and development to allow for greater open space, amenities and community facilities, which in turn would improve the quality of life for the individual. This option also poses the least amount of impacts on the environment out of the 3 options, which indirectly has a positive effect on human health.
Water	0	Policies in the plan ensure that development will only take place in areas where



Environmental Issue	Score	Commentary
		wastewater and water supply capacity have been assessed with the aim of reducing pressure on surface water and groundwater. In addition, this option will aim for the preservation and enhancement of good water quality in line with the Water Framework Directive.
Soil	0	This scenario would involve uptake of land the majority of which is made ground and therefore impacts will be minimal.
Air & Climate	0	Development will be concentrated in areas well served by existing and planned infrastructure making it convenient for the population to utilise public transport and thereby reduce CO <sub>2</sub> emissions and negative impacts to air quality and climate.
Material Assets	✓	This option focuses development in existing development areas and also promotes development on brownfield sites and on Greenfield sites only where there is a natural extension to existing zonings. This option would help to rejuvenate existing derelict sites, which would improve the town's architectural character and townscape and consequently its tourist function. This option promotes development where there is already provision of services, water supply and transport systems can be planned to accommodate development.
Cultural Heritage	0	This option will concentrate development in areas already developed or zoned for development. There are policies and objectives within the plan to ensure that Cultural Heritage is protected and enhanced and therefore will prevent development impacting on cultural heritage.
Landscape	*	This option would lead to the development of a more compact urban structure and reduce the need for the development of greenfield areas on the edge of town. This option will concentrate development in the town and on lands zoned for development and will see development of brownfield or derelict sites, which should reduce the visual impact on the landscape of the area. Some greenfield lands will be developed therefore there may be slight negative impacts.
Traffic	0	With the provision of sustainable public transport, it is likely that there will be an increase of use in public transport and reductions in the distances of commuting for the increasing population, as development is concentrated in the town and on lands planned and zoned for development.

### Option 3 - Extend new development zonings on Greenfield Lands

Alternative Option 3 is to extend new development zonings wholly on greenfield lands. Much of the greenfield lands to the north and south of the town is highly elevated and much of the greenfield lands within the town centre is designated open space and/or acts as a protective buffer between the town and the Sullane River. This area is of great amenity and recreational value to the town and its visual and landscape sensitivity extensive development, particularly commercial, could result in some negative impacts.

Therefore this option would involve extending zonings into the greenfield areas of the Town that is considered to be of high landscape character. Therefore this option would allow development to extend rather than to consolidate and is not considered to be sustainable.

This type of development would result in the loss of the greenfield land and agricultural lands. Developments on greenfield lands outside the town centre would need to be serviced in addition to the already zoned lands, which would be unsustainable. In addition there would be a reliance on private transport into Macroom Town.

Therefore Option 3 is considered unsustainable due to its dispersed nature and primarily due to its potential negative impacts on the landscape. An overview of impacts by considering Option 3 is provided below in Table 7.2.4.



**Table 7.2.4: Extend new development zonings on Greenfield lands in accordance with submissions to the development plan.**

Environmental Issue	Score	Commentary
Biodiversity	x	Any developments within greenfield sites could potentially have a negative impact on biodiversity to some degree. Much of the Greenfield lands in Macroom are in agricultural use. These lands could potentially be impacted directly and indirectly by development on both in this area and skirting this area. Any developments within greenfield sites could potentially have a negative impact on flora to some degree.
Population and Human Health	0	This scenario would create a higher dependency on the private motorcar, which may adversely affect human health due to deterioration of air quality, as development would not be proposed in a planned phased manner. It would increase the amount of development on open space within the town boundary; this would reduce the number of amenities for the population and tourists visiting the town of Macroom. Overall this option is considered neutral in terms of human health and on the quality of life for the individual.
Water	x	Much of the greenfield lands in Macroom are in agricultural use, development on these lands could potentially have negative impacts on the water quality due to the increased demand for groundwater, which would place pressure on surface water and on groundwater quality. Similarly, dispersed development may have indirect effects on the Gearagh to the south of the town.
Soil	x	Development on greenfield lands would eventually result in loss of fertile soils/resources in favour of development of brownfield sites.
Air & Climate	0	Under this scenario there is no provision for the facilitation of a green fabric and therefore there would be a greater reliance on the private car rather than use of cycleways and pedestrian links resulting in increased CO <sub>2</sub> emissions and negative impacts to air quality and climate.
Material Assets	x	This option would result in the development of greenfield sites instead of the re-use of brownfield sites and the redevelopment of derelict structures within the town. This option would therefore result in the further dilapidation of the town centre and would not be sustainable in the long term. This could have indirect impacts on the tourism industry of Macroom.
Cultural Heritage	x	The development of greenfield lands may give rise to increased risk of impact on archaeology and built heritage given the overall high archaeological potential of the plan area due sub-surface remains may be encountered and thereby impacted upon.
Landscape	x	This scenario would result in the development of greenfield lands within the town boundary and is likely to put pressure on the open landscapes to the north, south and west of the town. In addition, without development of brownfield or derelict sites in favour of greenfield sites, these areas will continue to be unused and negatively impact upon the landscape character of the town.
Traffic	x	If all Greenfield rezoning submissions were accepted and these lands developed in addition to the lands already zoned within the town, this would result in a haphazard approach to the town planning principles of the town. There would not be capacity to extend public transport links in a dispersed manner throughout the town, therefore this would increase the number of people travelling by private means of transport leading to traffic congestion and delays and pressure on existing road network.

### 7.3 CONCLUSION

Table 7.3.1. below summarizes the scoring for each development option. As stated above it is considered that development option 3 is considered unsustainable due to its dispersed nature and primarily due to its potential negative impacts on the landscape while option 1 (the "do nothing" scenario) was considered to do little to enhance and improve the area. Therefore development Option 2 has clearly emerged as the preferred option as it proposes to consolidate and enhance Macroom Town Centre while also protecting the rest of the town council area outside the town development boundary. Option 2 will be examined in more detail in Chapter 8.



Table 7.3.1 Summary of Development Option Score

SEA Objective	Option 1	Option 2	Option 3
Biodiversity	x	0	x
Population and Human Health	0	✓	0
Water	x	0	x
Soil	x	0	x
Air & Climate	x	0	0
Material Assets	x	✓	x
Cultural Heritage	x	0	x
Landscape	x	x	x
Traffic	x	0	x

## **8 EVALUATION OF THE PLAN POLICIES**

### **8.1 INTRODUCTION**

The purpose of this section of the Environmental Report is to evaluate as far as is possible the environmental effects of the Town Plan and to set out measures envisaged to prevent, reduce and as far as possible offset any significant adverse effects on the environment. This section therefore evaluates the Plans objectives against the SEA objectives. As part of the methodology a matrix was developed to assess the strategic objectives of the Macroom Development Plan against the objectives devised to ensure that the strategy is sustainable, see Table 8.2 below. This process enables an overview of where potential environmental problems may arise from implementation of the Plan and allows for additional objectives/policies to be generated to mitigate against them if necessary

Overall the proposed Plan will not have a negative impact on the environment. Where potential impacts/constraints occur mitigation measures have been put in place by way of omission of proposals and introduction of policies and monitoring to ensure that there is no deterioration in environmental quality into the future. Mitigation and monitoring measures are described in Chapters 9 and 10 respectively and briefly in note form where appropriate in Table 8.2.

The environmental objectives of Biodiversity Flora and Fauna, Population and Human Health, Soil water, Air and Climatic Factors, Energy, Material Assets, Cultural Heritage and Landscape area assessed against the objectives outlined in the Macroom Town Development Plan 2009 – 2015.



## 8.2 ASSESMENT CRITERIA

The assessment criteria used is based on the likely significant effects of the Plan's Objectives on the environmental objectives as detailed in Table 8.2. The criteria used for the assessment is described in Table 8.1:

Table 8.1 Assessment Criteria

Type of Impact	Description	Symbol
<b>Positive</b>	Improves the quality of the environment (i.e. improves air quality, biodiversity etc. Positive impacts may be Short Term / Temporary  Long Term/ Permanent Indirect	+  +S +L +T +P +I
<b>Negative</b>	Reduces the quality of the environment (i.e. reducing air quality or reducing species diversity). A negative impact can however be sufficiently minimised/eliminated by installation of appropriate mitigation measures. Negative impacts may be Short Term/Temporary Long Term/Permanent Indirect	-  -I -S -L
<b>Short term/ Temporary</b>	Usually lasts the duration of the project i.e. during the construction stage of a development i.e. during provision of infrastructure recommended in the Plan.	S +S or -S
<b>Long term/ Permanent</b>	Will last greater than 60 years	L +L or -L
<b>Indirect</b>	Effects that are not a direct result of the Plan, same as secondary effects.	I +I or -I
<b>Neutral</b>	No Impact	0
<b>Questionable</b>	Unknown	?
<b>Cumulative</b>	Effects on the environment that result from incremental changes caused by strategic action together with other past, present, and reasonably foreseeable future actions. These results can result from individually minor but collectively significant actions taking place over time or space.	C

Table 8.1: Assessment Matrix Plan Objectives		Development Plan Objectives												Comments					
Development Plan Objectives		B1	B2	PH1	PH2	S1	S2	S3	W1i	W2i	W3	W4a	A1		E1	M1	M2	CH1	CH2

Transportation & Movement Objectives																				
T1: Support the completion of the proposed Macrooom bypass	-S	-S	+L	+L	+L	-L	-L	O	?	-L	O	?	O	I+	O	O	O	O	-L	The bypass is likely to have an impact in terms of biodiversity, soils and air along the chosen route. However it will also be indirectly positive in terms of air and population and human health in Macrooom town centre with the reduction of car traffic.
T2: Facilitate the number of road improvements and widening schemes along the approach and regional routes into Macrooom including improvements to footpaths, lighting etc including the following routes - T2.1 Macrooom to Millstreet, T2.2 Macrooom to Dunmanway	-S	-S	+L	+L	+L	O	O	O	O	O	O	O	O	O	O	O	O	O	-S	Road improvements unlikely to have any detrimental effect on Macrooom town
T3: Facilitate a number of road improvements and upgrades along the local routes into Macrooom including improvements to footpaths, lighting etc including the following routes: T3.1 Coolybane Road, T3.2 Mill Road, T3.3 Chapel Hill, T3.4 New Road	-S	-S	+L	+L	+L	O	O	O	O	O	O	O	O	O	O	O	O	O	-S	Road improvements unlikely to have any detrimental effect on Macrooom town
T4: Facilitate the provision of a pedestrian walkway on the north face of the Macrooom River bridge and consider the possibility of providing two pedestrian bridges over the Sullane at the following locations: T4.1 Mill road to Town Centre, T4.2 Castle Demense to Masseytown	-S	-S	+L	+L	-S	-S	O	O	?	-S	O	O	O	-S	O	O	O	O	-S	May be short term impacts while bridge is being built, however considered a positive in the long term. Policies in plan to protect the watercourse from pollution during construction
T5: Facilitate the delivery of the Masseytown Relief Road in conjunction with the construction of new housing developments over the plan period	-S	-S	+L	+L	-L	-L	O	O	O	O	O	O	O	-I	O	O	O	O	-L	It is considered that new road developments generally have negative impacts in terms of biodiversity, air and landscape. However it is considered without the relief road impacts would be much greater on the environment.
T6: Reserve access points throughout Macrooom, as identified on the Transport Concept Map, to allow development of vehicular routes in facilitating the sustainable development of	O	O	+L	+L	+L	+L	O	O	O	O	O	O	O	+I	O	O	O	O	+L	This is seen as a positive objective as it allows for the redevelopment of brownfield lands and consolidation of the existing town centre.



Table 8.1: Assessment Matrix Plan Objectives

Development Plan Objectives	Biodiversity Flora & Fauna		Population & Human Health			Soil			Water				Air & Climate	Energy	Material Assets	Cultural Heritage	Landscape	Comments	
	B1	B2	PH1	PH2	S1	S2	S3	W1i	W2i	W3	W4a	A1	E1	M1	M2	CH1	CH2		L1i
backland areas and thereby allowing for improved circulation. Access roads should be overlooked and appropriately landscaped.																			
T7: facilitate the delivery of the proposed Green Route Link between Macroom and Cork City within the lifetime of the Development Plan, this should include increased bus stops and the provision of real time information.	O	O	+L	+L	O	O	O	O	O	O	O	O	+L	O	O	O	O	+L	Route is existing therefore sustainable transport considered positive
T8: Consider development proposals for the provision of cycle paths in the town along the following routes	+I	+I	+L	+L	+I	+I		O	O	O	O	O	+L	O	O	O	O	+L	Cycle paths are a sustainable form of transport therefore no negative impacts
T9: Investigate the provision of cycle paths through open space links	-I	-I	+L	+L	-I	-I		O	O	O	O	O	+L	O	O	O	O	+L	Generally considered a positive objective however cycle paths could indirectly interfere with biodiversity and impact on quality of soils
T10: provide bicycle stands in the Town Centre and at neighbourhood centres	O	O	+S	+S	O	O		O	O	O	O	O	O	O	O	O	O	O	
T11: Actively consider the construction of a multi-storey car park within the Mart areas	O	O	+L	+L	+L	O		O	O	O	O	O	+L	O	O	O	O	+I	Generally positive in terms of air quality due to additional parking provision in town centre and reduced congestion.
<b>Retail Objectives</b>																			
RT1: Expand the Town's retailing provision through the development of key infill opportunity sites within the Town Centre Core	O	O	+L	+L	+L	+L		O	O	O	O	O	+L	O	O	O	O	+I	Sustainable in terms of town centre consolidation
RT2: To encourage local shopping facilities at the proposed neighbourhood centre locations - Masseytown and Codrun Crossroads	O	O	+L	+L	+L	+L		O	O	O	O	O	+L	O	+I	O	O	+I	Sustainable in terms of set sufficient local needs which would reduce the need for the private motorcar
RT3: Develop the Towns retailing Capacity to service a convenience catchment population with a radius of 15km and a wider comparison catchment population within a radius of 30km of Macroom Town.	O	O	+I	+I	O	O		O	O	O	O	O	-L	O	O	O	O	O	Would generate additional traffic in town, however would improve retailing and employment within the town
<b>Town Centre Regeneration Objectives</b>																			



Table 8.1: Assessment Matrix Plan Objectives		Development Plan Objectives										Comments									
		B1	B2	PH1	PH2	S1	S2	S3	W1i	W2i	W3		W4a	A1	E1	M1	M2	CH1	CH2	L1i	
Development Plan Objectives	TC1: Prepare an Urban Renewal Framework Plan for the Town Centre that addresses each of the three character areas, namely The Mart Area, The Market Square, The River Quarter.	O	O	+L	+I	+I	+I	O	O	+L	O	+L	O	+I	O	O	+I	+I	+L		
	TC2: Develop and enhance the Street Market, improve layout and accessibility and prioritise the sale of quality local produce	O	O	+L	O	+I	+I	O	O	O	O	O	O	+L	O	O	O	+I	+I	+L	
	TC3: Relocate the Council yards from the centre of the town in order to facilitate development at the 'Mart Area'	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
	TC4: Ensure adequate lands are reserved in the Mart Area for the proposed access road from the by-pass and that pedestrian permeability is maintained	-I	-I	+I	O	+L	-S	O	O	O	O	O	O	-S	O	O	O	O	O	-L	
	TC5: Seek the designation of the Town Centre for tax and grant incentives in the event of future urban renewal schemes being introduced.	+I	+I	+I	+I	+L	+I	O	O	O	O	O	O	+L	O	O	O	O	+I	+I	
<b>Built Heritage Objectives</b>																					
	BH1: Continue to facilitate greater public access to Macroom Castle Demesne	O	O	+L	O	O	O	O	O	O	O	O	O	O	O	O	+L	+L	+I		
	BH2: Examine the feasibility of re-using the Church of Ireland Church (RPS no. 21) for a community purpose	O	O	+L	+L	O	O	O	O	O	O	O	O	O	O	O	+L	+L	O		
<b>Housing Objectives</b>																					
	H1: Identify lands suitable for housing development within the Plan period and beyond	-I	-I	+I	+I	+I	-I	-I	O	O	O	O	O	+I	O	+L	O	O	-S		
	H2: Apply a sequential approach to applications for housing development in the Town. Supporting development, in the first instance, at town centre	-I	O	+I	+I	O	O	O	-I	?	?	?	O	O	O	O	+L	+L	-S		

Generally positive in terms of consolidation of the town centre, also allows for indirect positive impacts on the towns character of the town

Allows for indirect positive impacts on the towns character of the town and reduces air impacts due to local goods being sold

Location of proposed Council Yards unknown therefore impacts unknown. Redevelopment of Mart Area is generally seen as positive.

Allows for indirect positive impacts on the towns character of the town and reduces air impacts due to promotion of town centre

No negative impacts seen on examining the feasibility of re-using the Church of Ireland Church

Depending on where the housing developments are to be located, policies in plan to use sequential approach to development of housing estates

As above















Table 8.1: Assessment Matrix Plan Objectives		Development Plan Objectives												Comments							
Development Plan Objectives		B1	B2	B1	PH1	PH2	S1	S2	S3	W1	W2	W3	W4a		A1	E1	M1	M2	CH1	CH2	L1
TO5: Explore the development of a tourist trail that links with the Macrooom Walking Guide and is focused on activities suitable for day trippers to the Town		O	O	+L	+L	O	O	O	O	O	O	O	O	O	+L	O	O	+L	+L	O	Positive due to sustainable walking proposals.
<b>Employment, Enterprise &amp; Economic Development Objectives</b>																					
E1: Promote the development of a Business Industry and Technology Park on lands zoned BITP at Coolyhane which would facilitate the following range of uses, incubation units, small and medium sized industries and possibly a distribution centre		?	?	+L	+L	-I	-I	-I	O	O	O	O	O	O	+I	O	O	O	O	-I	negative impacts in terms of development of greenfield lands, however located in a sustainable location
E2: Promote the redevelopment of the Hartnetts Cross Industrial Park to accommodate medium sized manufacturing plants		O	O	+L	+L	+I	+I	+I	O	O	O	O	O	O	+I	O	O	O	O	O	Brownfield redevelopment is considered positive
E3: Support the introduction of a structural programme for business development in the town thereby encouraging enterprise and economic growth for the town		O	O	+L	+L	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
E4: Promote the development of small/medium industrial units at Condrum		?	?	+L	+L	-I	-I	-I	O	O	O	O	O	O	+I	O	O	O	O	+I	Considered to be in a sustainable location close to residential areas for employment and the town.
<b>Infrastructure, Engineering and Utilities Objectives</b>																					
I1: Support the expansion of the existing Wastewater Treatment Plant to allow increased treatment capacity. Development in the town will need to be restricted until the expansion is completed		+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	O	+L	+L	O	O	Overall positive objective as it will provide the town with necessary services
I2: Support the provision of additional storage capacity at Masseytown Pump Station		+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	O	+L	+L	O	O	Overall positive objective as it will provide the town with necessary services
I3: ensure that the water quality of the River Sullane is maintained to a high level as the primary source of potable water for Macrooom		+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	O	+L	+L	O	O	Overall positive objective as it will provide the town with necessary services
I4: Preserve and protect the natural surface water		+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	+L	O	+L	+L	O	O	





## 9 MITIGATION

### 9.1 INTRODUCTION

Annex 1 (g) of the Directive requires that the Environmental Report describe the measures envisaged to prevent, reduce and/or offset as fully as possible any significant adverse effects on the environment from implementing the plan.

It should be noted that proposals to implement this plan may also require Environmental Impact Assessment (EIA) at planning application stage. Other impacts and necessary mitigation measures or actions may be identified during this process.

The likely significant effects of the Plan have been informed by trends and potential impacts as identified in section 5 of this report, impacts arising in the assessment of policies and objectives of the Plan as set out in table 8.2 of this report.

The following table 9.1 links significant effects with potential trends and impacts as set out above with proposed mitigation measures and monitoring as set out in table 10.1 below.

The mitigation measures identified in this Environmental Report have fed into the Adopted Plan by way of inclusion of additional protective policies and objectives and by changing the wording of proposed development objectives. It is proposed to include all mitigation measures as outlined below into the Macroom Town Development Plan where possible.



**Table 9.1: Significant Effects, Proposed Mitigation Measures and Proposed Monitoring of draft Macroroom Town Development Plan**

Trend and Potential Impacts	Significant Effects	Mitigation Measures (and reference to where addressed in the draft Plan)	Monitoring (Table 10.1)
<p><b>Biodiversity</b></p> <p>There is potential for impacts to the aquatic environment in the form of industrial and agricultural run-off, municipal sources of pollution, bridge building, fragmentation of river corridors and soil erosion. These risks apply in particular to the Sullane River. Under the Water Framework Directive, water quality must achieve "good status" by 2015.</p>	<p>Possibly significant if not mitigated</p>	<p>Policy NEP3 commits to protect and enhance the quality of watercourses through the promotion of Sustainable Urban Drainage Systems (SUDS).</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: B2, W1,W3, W4</p>
<p>The Gearagh cSAC, pHNA and SPA and River Sullane may come under pressure from a number of sources, notably from increased recreation and tourism developments, and additional infrastructural development including through increased surface runoff and potential impacts to groundwater quality.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommendation to maintain the conservation value of The Gearagh (Ramsar site, SPA, cSAC and pHNA) during the lifetime of this plan and to ensure Appropriate Assessment is carried out where development projects are likely to have significant effects on this Natura 2000 site whether within or outside the boundary of the designated site.</p> <p><b>This is fully addressed by Policy NEP8.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: B1, B2, W1,W3, W4</p>
<p>Invasive species: There is potential for invasive species to enter surface waters from a number of sources including runoff from garden centres, from boats and by dumping of waste from fish tanks and garden ponds. There is therefore a need to include a policy in the new plan to prevent the introduction of those alien species which threaten ecosystems, habitats or species. The utilisation of native species in amenity planting and stocking along with change in community actions to reduce the introduction and spread of non-native species should be encouraged.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends a policy for protection against invasive species is required in the new Macroroom Town Plan.</p> <p><b>Policy NEP9 provides protection for native flora and fauna against non-native species.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: B1 B2</p>
<p>Removal of Ecological Corridors: The removal of ecological networks / corridors is a significant issue. It is recognised that there has been a significant increase in hedgerow removal throughout Ireland in recent years.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommends that the plan should include specific buffer zones so as to protect features of European, national, regional county and local importance including rivers and streams from development proposals both in terms of visual and ecological impacts.</p> <p><b>Policy NEP2 ensures that the River Sullane and its tributaries, including their riparian corridors and associated habitats and species, are protected.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: B1, B2</p>
<p>The N22 Macroroom bypass may have potential</p>	<p>Possibly significant if not</p>	<p>SEA recommends a policy to undertake environmental appraisals or</p>	<p>Refer to Monitoring Programme As</p>



<p>impacts on flora and fauna and habitats within or close to the town boundary. However these issues have been addressed in the EIA for the scheme. It is important that the mitigation and monitoring measures prescribed in the EIS are adhered to.</p>	<p>mitigated</p>	<p>Environmental Impact Assessments and Appropriate Assessments in areas within or likely to affect cSAC's and SPAs; i.e. new roads and other infrastructure, other major developments, etc.</p> <p><b>This is adequately addressed by Policy NEP8</b></p> <p>SEA recommends inclusion of a policy for the preparation of a habitat map (including wetlands) of the town.</p> <p><b>No policy for preparation of habitat map in the draft Plan</b></p> <p>The Town Plan, should include an objective to ensure development in the Macroom area and the provision of services (e.g., roads, wastewater and waste related services etc.) in the Macroom area take into account the Management Plan, where, available, for Gearagh cSAC/SPA.</p> <p>Policies NEP8 partly addresses this requirement however does not take account of the management Plan for the Gearagh.</p>	<p>Indicated In Table 10.1: B1, B2, M1 and M2</p>
<p><b>Population and Human Health</b></p>			
<p>Provided planning applications granted in particular for residential developments to meet the projected population increases have the provision to provide good quality water and adequate wastewater treatment for such developments there is no predicted impacts to population and human health.</p>	<p>Possibly significant if not mitigated</p>	<p>Policies WSP11-WSP10 and WWP1-WWP5 in the draft Plan refer to water supply and wastewater services for existing and new development.</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH2, M1,M2</p>
<p>The Plan provides for the provision of amenity and open space that improves quality of life. The Plan also promotes the increased use and provision of public transport and renewable resources in their construction. Provided there is compliance with these policies and standards housing development should not have a significant environmental impact.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends an objective to apply a phasing approach to development within the lifetime of this plan including monitoring of residential applications, which ensures that residential development only takes place to a point, which meets the population projections as set by the CASP population projection.</p> <p>Policies H1-H6 of the plan refers to land and development standards for new residential development.</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH2, M1,M2, L1</p>
<p>The Plan also promotes diverse employment opportunities, social inclusion and generation of communities all of which improve the quality of life.</p>		<p>This is fully addressed by the Plan.</p> <p>Policies EP1-EP10 support employment; Policy HP5 supports social inclusion; policies CP1-CP7 and objectives C1-C8 provide for community services.</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH1, PH2</p>
<p><b>Soils</b></p>			
<p>New developments on greenfield sites involve changing the character of the ground and soil. New developments have the potential to contaminate the</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that the Draft Town development Plan should include a policy for the development of brownfield sites over Greenfield sites and should include for implementation of the</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: S1, S2, S3</p>



<p>developments have the potential to contaminate the soil and underlying groundwater, particularly in the case of septic tanks and poor wastewater treatment facilities. Existing activities such as agriculture and manufacturing may also pose a risk to soil and groundwater.</p> <p>Construction, agriculture and forestry can lead to soil erosion, which has negative effects on water quality and aquatic biodiversity. Soil erosion results in a loss of nutrients in the upper layers of the soils also leading to a reduced water-holding capacity. Soil erosion can also lead to sediment movement and agricultural pollution into watercourses. This can lead to increased solids in watercourses, disruption of ecosystems and contamination of drinking water.</p>	<p>Possibly significant if not mitigated</p>	<p>Greenfield sites and should include for implementation of the policies and objectives of the Soils Directive.</p> <p>The SEA recommends that where development does take place best practice should be implemented to prevent soil erosion and prevent escape of suspended solids into nearby watercourses</p> <p><b>Policy NEP12 requires new development to have regard to the Soil Directive.</b></p>	
<p>The frequent rock outcrops and the presence of rock close to the ground surface throughout the Study Area and particularly to the west of Macroom may be a constraint to road construction if excavation through rock for cuttings is required. This may be particularly pertinent to the areas of high ground west of Macroom.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends the inclusion of a policy for the Protection of Areas of Geological Interest.</p> <p><b>Policy NEP10 fully addresses this to ensure protection for areas of geological interest.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: S2</p>
<b>Water</b>			
<p>In order to facilitate population and housing growth the plan promotes the protection of water quality and water supply through a number of policies and objectives including the provision of adequate infrastructure, upgrading of old water mains, metering of non domestic users, separation of foul and surface water effluents, promotion of SUDS.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that the Plan should include a policy for a Groundwater Protection Plan for groundwater resources in the Macroom area in accordance with the Groundwater Protection Scheme for Cork County.</p> <p>Development in areas of extreme GW vulnerability should employ best practice to ensure that the underlying GW resource is protected.</p> <p>The plan should also continue monitoring of drinking waters and encourage sustainable water usage (in SUDS).</p> <p><b>Policies in the plan provide for this, specifically policy WSP2, WSP4, WSP5, WSP8, WWP1, WWP2 and SWP3.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4</p>
<p>There are a variety of activities both within and outside the study area, which have the potential to impact on water quality. These include sewerage treatment works, domestic water treatment systems, housing, construction work, industry, landfill, spillages, increased road runoff and agriculture.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA promotes compliance with the Water Framework Directive and the implementation of Management Plans for the South Western region.</p> <p><b>Policy WSP2 and WSP7 comply with this.</b></p> <p>The SEA recommends that all construction of bridges, causeways or</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4, M1, M2</p>



<p>similar in study area will adhere to best practices guidelines, in particular all NRA Guidelines for road design and construction. Bridge design will avoid in-stream works where possible and all plans will include lengths consultation with the South Western Regional Fisheries Board. There should be a policy to adhere to implementation of any proposed Draft Motorised Bye Laws in order to protect water quality in the River Sullane, Laney or Carrigadrohid Reservoir.</p> <p><b>Policy NP13 and WSP10 fully complies with this.</b></p> <p>The SEA recommends a new protection policy to "ensure that a survey for freshwater species, in particular freshwater pearl-mussel, is undertaken prior to the construction of any bridges in the area".</p> <p><b>Policy NP14 supports the undertaking of a survey for freshwater species prior to the construction of any bridges in the area.</b></p>		<p>similar in study area will adhere to best practices guidelines, in particular all NRA Guidelines for road design and construction. Bridge design will avoid in-stream works where possible and all plans will include lengths consultation with the South Western Regional Fisheries Board. There should be a policy to adhere to implementation of any proposed Draft Motorised Bye Laws in order to protect water quality in the River Sullane, Laney or Carrigadrohid Reservoir.</p> <p><b>Policy NP13 and WSP10 fully complies with this.</b></p> <p>The SEA recommends a new protection policy to "ensure that a survey for freshwater species, in particular freshwater pearl-mussel, is undertaken prior to the construction of any bridges in the area".</p> <p><b>Policy NP14 supports the undertaking of a survey for freshwater species prior to the construction of any bridges in the area.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4, M1, M2</p>
<p>Specifically the existing problems within the Macroom area include:</p> <p>The river Sullane is classified as "Possibly at Risk of Not Achieving Good Status" and the town centre is considered "probably at risk of not achieving good status" for groundwater Impacts to Fisheries - Direct impacts to water will have indirect effects on fisheries.</p> <p>Flooding has not been identified as important particularly in relation to areas where land zoned for development is proposed near or adjacent to rivers or their floodplains. However the threat of climate change and global warming may have an influence over meteorological conditions such that to increase flooding in the study area. Strict control of planning will be required in these areas i.e. along the Sullane River Valley and the OPW's Guidelines on Flood Risk should be adhered to.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends maintaining high status or good status of waters where they exist and to achieve good quality status in all other waters by 2015. Good water is measured in quantity, quality and ecology for surface water and quantity and quality for groundwater.</p> <p><b>No specific policy in this regard, however a number of protective policies with regard to water courses and environment of the area under NEP Policies.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1</p>
<p>There is a possibility of unchecked increase in demand for wastewater treatment with potential for increased pollution to surface waters. Therefore correct treatment of wastewater is an important factor to consider in the quality of surface water. It is essential that the WWTP operates to highest</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA Notes that the OPW Flood Hazard Mapping identified flooding points in the study area. The SEA recommends that new development plan should have a policy to ensure that all new developments should have regard to areas that may be at risk from flooding. Flood Impact Assessment may be required at planning application stage to identify potential loss of flood plain storage and how it is to be offset in order to minimise the impact on the river flood regime at application stage.</p> <p><b>Policies SWP1 and SWP4 ensure mitigation measures to minimise risk of flooding and require new development to have regard to areas at risk of flooding.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4, M1, M2</p>



<p>standards and that monitoring of the performance of wastewater treatment plant and sewerage network is undertaken to capture leakages to GW and SW.</p>		<p>and ensure that WWTP comply with EPA Manuals. Policies WW01-WWP5 fully comply with this.</p>	
<p><b>Air and Climate</b></p>			
<p>As the population of Macroom continues to grow in the future, there is a need to ensure that growth is planned for and that there are sufficient and appropriate lands zoned to accommodate such growth. A sustainable transport system is required to reduce car dependence and reduce GHG emissions. Sustainable construction and design in addition to clean and energy efficient technologies should be encouraged at design stage. Perhaps planning applications and designs with renewable energy aspects could be given preferential consideration.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that sustainable forms of development and sustainable sources of energy should be encouraged in the new plan. There is a need to include a policy on sustainable buildings (Housing and commercial buildings) within the new plan.  This is fully addressed by Policy TP, energy Policies EP4 EP6.</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: A1</p>
<p>The development of a Macroom bypass would alleviate greenhouse gases in the town centre. The bulk of commuter traffic and freight traveling from Cork to Kerry will no longer pass through the town, thereby removing congestion borne emissions from Macroom town centre. Vehicle traveling on a bypass would travel non stop and in a higher gear, thus using fuel more efficiently and reducing emissions.</p>	<p>Positive impact</p>		<p>Refer to Monitoring Programme As Indicated In Table 10.1: A1</p>
<p>Sustainable forms of development and sustainable sources of energy should be encouraged in the new plan. There is a need to include a policy on sustainable building within the new plan.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that the plan should encourage utilisation of energy efficient technology in office and apartment block developments.  The SEA recommends that Sustainable design should be encouraged for all new builds, which should incorporate clean and energy efficient technologies such as solar panels to provide hot water, high levels of fabric insulation, solar gain, and natural ventilation to reduce heating and cooling loads and maximise energy efficiency. Existing vegetation and future landscaping are important considerations for site selection. The minimisation of waste production during the construction process and provision for recycling of construction and demolition waste is another key factor in the design of sustainable building.</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: E1</p>
<p>Future considerations should include examining the feasibility of district energy systems for public buildings and the Macroom urban area in general, such as combined heat and power and district heating, particularly for new developments. The</p>	<p>Not significant</p>	<p><b>Energy polices EP4 to EP6 fully with this.</b> <b>The SEA recommends</b> There is also a need to ensure a policy is in place to protect Macroom from Windfarm development as outlined in the Cork County Development Plan 2003-2009.  <b>Policy EP6 promotes sustainable sources of energy.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: E1</p>



<p>main advantages of district heat systems include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fewer emissions in densely populated areas;</li> <li><input type="checkbox"/> Less individual boilers;</li> <li><input type="checkbox"/> Higher energy efficiency and lower CO<sub>2</sub> emissions; and</li> <li><input type="checkbox"/> Reaching Higher Building Energy Rating Targets.</li> </ul>		<p>There is no policy in the plan with regard to Windfarms.</p>	
<p><b>Material Assets</b></p>			
<p><b>Transport</b></p> <p>Presently the N22 passes through the centre of Macrooom with high volumes of traffic at peak hours causing major traffic congestion due to the inadequate infrastructure. Therefore a new Macrooom Bypass is proposed. The project proposed by the National Roads Authority and Cork County Council is for a two-lane by-pass. A 100 metre wide corridor has been agreed for this route. Other constraints within the study area include congestion within the Town Centre especially during the summer months, lack of cycle routes and parking.</p>	<p>Possibly significant if not mitigated</p>	<p>This is fully addressed by Policies T1 – T11</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: A1</p>
<p>The main aim for Macrooom Town is to grow in a compact and sustainable manner. One of the key objectives objective is therefore to encourage continued growth in employment and services in the town. However if the town is to continue to grow and prosper its transportation linkages to other economic nodes need to be significantly improved.</p>	<p>Positive impact</p>	<p>This is fully addressed by Policies T1 – T11</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: A1, PH2</p>
<p><b>Wastewater Treatment</b></p>			
<p>The existing wastewater plant is currently at capacity. However it is proposed to upgrade the waste water treatment plant for the area, Barry &amp; Partners Consulting Engineers are preparing a preliminary report for the sewerage scheme for Macrooom Town Council which will be August 2008. Recommendations are to include the upgrading of the existing wastewater plant to increase treatment capacity and the provision of additional storage capacity at Masseytown Pump Station where upsized pumps will be required should more development occur in the catchment of this pump station.</p>	<p><b>Possibly significant if not mitigated</b></p>	<p>This is fully addressed by Policies WWP1 to WWP5</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: M1</p>



Water Supply	At present there is adequate water supply in the town. However there is not sufficient water supply for the future of the town's needs. Therefore there are long-term water capacity issues within the town and an additional reservoir may be needed to the north of the town to service the growing population of the town. Therefore policies should be included in the plan to monitor water supply and ensure future provision for population projections.	Possibly mitigated	if	not	significant	SEA Recommends that following new Policies to be included within the Plan:	Refer to Monitoring Programme As Indicated In Table 10.1: M2, M1, W1, W2, W3, W4
		Possibly mitigated	if	not	significant	<p>Outline a timeframe for the Waste Water Treatment Plant Upgrade.</p> <p><b>A timeframe has not been identified within the draft Plan</b></p> <p>Ensure no development takes place in the absence of the Waste Water Provision.</p> <p><b>This is fully addressed by Policy WWWP2</b></p> <p>The Plan should include a policy to ensure that all developments currently served by septic tanks should be connected to the WWTP where possible.</p> <p><b>This is fully addressed by Policy WWWP3</b></p> <p>To ensure separation of foul and surface water effluents through the provision of separate collecting networks and to ensure that all new developments provide separate collecting systems.</p> <p><b>This is fully addressed by Policy WWWP1</b></p> <p>Include a policy as per the Department of the Environment, Heritage and local Government (DoEHLG) policy, whereby: Storm water will not be combined with foul networks and all future development will provide soakways or separate storm networks.</p> <p><b>This is fully addressed by Policy WWWP4</b></p> <p>Policies should be included in the plan to monitor water supply and ensure future provision for population projections.</p> <p><b>This is fully addressed by Policy WSP1/WSP2</b></p> <p>Include specific objective for the preparation of a Water Conservation Strategy for Macroom town and surrounding area as appropriate.</p> <p><b>This is fully addressed by Policy WSP6</b></p>	Refer to Monitoring Programme As Indicated In Table 10.1: CH1, CH2
		Possibly mitigated	if	not	significant	SEA recommends the following new Policy to be included in the plan:	Refer to Monitoring Programme As Indicated In Table 10.1: CH1, CH2

<p>monuments through disturbance or destruction of the monuments. New developments that are adjacent to and/or alterations/extensions to existing protected structures also need to be carefully managed to ensure that the cultural heritage of such areas are not disturbed or negatively impacted upon.</p>		<p><input type="checkbox"/> Any direct impacts on national monuments in State or Local Authority care or subject to a preservation order will require the consent of the Minister for the Environment, Heritage and Local Government under Section 14 of the National Monuments Act 1930 as amended by Section 5 of the National Monuments (Amendment) Act 2004.</p> <p><b>This is fully addressed by Policy AP5</b></p>	<p><b>Refer to Monitoring Programme As Indicated In Table 10.1:</b> CH1, CH2</p>
<p>It is deemed that the Plan area is of high archaeological potential. This determination is based on the presence of substantial archaeological remains from many periods of the past within the development area.</p> <p>In addition to the Record of Protected Structures, structures of architectural heritage merit, although not put forward for inclusion in the Record of Protected Structures (RPS) may continue to contribute to the identity of a locality and should be taken into account in the preparation of the Development Plan. The Macroon area is unique in form and character. The contribution of any features, which give identity to and enhance that uniqueness, should be given recognition in the Development Plan.</p>	<p>Possibly significant if not mitigated</p> <p>Possibly significant if not mitigated</p>	<p>Any potential impacts on archaeological heritage should be subject to full archaeological assessment. (i.e. not just medium to major scale developments as noted in the plan).</p> <p><b>This is fully addressed by Policy AP4</b></p> <p>It is recommended that maps indicating RMP's, RPS's and other elements of cultural heritage should encapsulate the entire town rather than just the town centre.</p>	
<p><b>Landscape</b></p>			
<p>It is considered that much of the lands surrounding the town are of high landscape character. Elevated lands to the north and south of the town are sensitive to development. Lands to the east and south east of Macroom town are designated as Scenic Landscape in the Cork County Development Plan 2003 and Draft Cork County Development Plan 2007. Two scenic routes are located in close proximity to the town and there are also a number of locally important views as outlined above. In addition The Gearagh is located to the south west of the town and is designated as a cSAC and SPA. The policies and objectives for landscape protection in the Plan are generally positive.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommends the following new policies to be included in the plan:</p> <p><input type="checkbox"/> New Developments in the plan area should have cognisance to the A89, A90 and A91 Scenic Routes in the Cork County Development Plan 2003 (S72/S73/S74 Scenic Routes in the Draft Cork County Development Plan 2007).</p> <p><b>This is fully addressed by Policy NEP15</b></p>	<p><b>Refer to Monitoring Programme As Indicated In Table 10.1:</b> L1</p>



## 10 MONITORING

Article 10 of the SEA Directive (2001/42/EEC) requires Member States to monitor the significant environmental effects of the implementation of plans *“in order, inter alia, to identify at an early stage unforeseen adverse effects to be able to undertake appropriate remedial action”*. The primary purpose of monitoring is to cross-check significant environmental effects which arise during the implementation stage against those predicted during the plan preparation stage.

The Directive leaves considerable flexibility to Member States in deciding how monitoring shall be arranged, however it is generally agreed that a mixture of “quantitative and qualitative indicators are required. The Directive recognises that the monitoring does not necessarily require new research activity and that existing sources of information can be used. Monitoring programmes for different Plans can also be combined e.g. monitoring of within the Macroom Development Plan can be combined with monitoring required for the Cork County Development Plans. This allows for consistency in monitoring across the county and assists in comparing results.

In addition monitoring can be used to identify any information gaps and/deficiencies that were identified as part of the SEA process. Furthermore, Government Guidelines state that monitoring should concentrate on the likely significant effects identified in the Environmental Report (DOEHLG, 2004).

Monitoring will be based around the SEA “Environmental Objectives, indicators and targets. The Objectives, indicators and targets for the various environmental topics are set out below in Table 10.1. The indicators that area used will show changes that would be attributable to the implementation of the Plan. The indicators chosen are at a level, which is relevant to the Plan and are collated on and reported on by a variety of government agencies including EPA, NPWS, OPW and WFD.

Monitoring proposals must concentrate on likely significant environmental effects, which have been identified in the Environmental Report and the measures identified as necessary to prevent, reduce, or offset any significant adverse effects. The indicators/monitoring will act as an early warning sign so that appropriate remedial action is undertaken.

### Responsibilities and Frequency of Reporting

The Statutory Manager’s Report on progress in achieving objectives of the Town Plan, takes place two years after the adoption of the Town Plan and “shall include information in relation to the progress on, and the results of monitoring the significant environmental effects of implementation of the plan”. If an objective or policy is having a significant adverse effect a variation may be considered during the lifetime of the plan.

It is largely the responsibility of Cork County Council to undertake the monitoring, however it is the responsibility of Macroom Town Council (MTC) to interpret the monitoring data relevant to Macroom and to ensure new studies recommended in the Environmental Report (i.e. habitat survey) are undertaken.

**Identification of Significant Gaps in Environmental Information**

During the preparation of this Environmental Report a number of gaps in environmental information have been identified, these comprise:

- The lack of local habitat surveys for non-designated sites and insufficient baseline data on habitats and species to allow for on-going monitoring. There is a need to prepare a local biodiversity action plan, which is expected to occur during the lifetime of the new 2009-2015 Plan. It is recommended that Macroom Town Council undertake habitat surveys of the study area
- No Landscape assessment for Macroom Town
- Lack of information on fisheries
- Lack of monitoring on “Major Pressures reported in the assessment of Habitats and Species” in Macroom

**Table 10.1 Monitoring**

Issue	Objective	Impact	Target	Indicator	Responsibility	Frequency
<b>Biodiversity, Flora and Fauna</b>						
B1	To avoid significant adverse impacts (direct, cumulative and indirect), to protected habitats, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites.	Loss of biodiversity and ecological networks and spread of invasive species	No significant adverse impacts, (direct, cumulative and indirect impacts), to relevant habitats, species or their sustaining resources in designated ecological sites.	Number of significant adverse impacts (direct, cumulative and indirect impacts), to relevant habitats and species in designated ecological sites.	MTC DoEHLG	Review each planning application as submitted
B2	To protect the marine environment, aquatic biodiversity, flora and fauna and to promote management strategies.	Loss of aquatic biodiversity, flora and fauna.	No significant adverse impacts, (direct, cumulative and indirect impacts), to relevant habitats, species or their sustaining resources in designated ecological sites.	Number of significant adverse impacts (direct, cumulative and indirect impacts), to relevant habitats and species in designated ecological sites.	MTC DoEHLG	Review each planning application as submitted



Issue	Objective	Impact	Target	Indicator	Responsibility	Frequency
<b>Population and Human Health</b>						
PH1	To improve the quality of life for the people of Macroon through high quality residential, working and recreational environments, sustainable travel patterns.	Deterioration in: streetscape quality due to increased litter; in human health and quality of life; Lack of a diversity in employment and accommodation	To improve quality of life, provision of improved physical and social infrastructure, to reduce journey to work times and allow for a better match between place of residence and place of work.	Journey to work times.	CCC	Review during the lifetime of the Plan
PH2	To protect human health from hazards or nuisances arising from traffic and incompatible landuses.	Poor Drinking water quality Poor Air quality; deterioration in human health and quality of life.	No spatial concentrations of health problems arising from environmental factors.	Occurrence of a spatially concentrated deterioration in human health.	MTC/CCC	Review during the lifetime of the Plan
<b>Soils</b>						
S1	To maximise the sustainable re-use of brownfield lands and the existing built environment, rather than developing greenfield lands.	Loss of biodiversity and quality soils through over use of greenfield sites instead of brownfield sites	All brownfield lands to be redeveloped at the end of the plan lifespan (subject to availability on the open market and demand for such land).	Area of brownfield land available.	MTC	Review during the lifetime of the Plan
S2	To maintain the quality of soils.	Loss of biodiversity and quality soils.	To reduce contamination and safeguard soil quality and quantity.	Cannot specifically monitor at present, however, when soil directive comes into force, will be obliged to consider impacts of policies on soils.	CCC	Review during the lifetime of the Plan
S3	To minimise waste production and reduce the volume of waste to landfill and to operate sustainable waste management practices.	Negative impacts to groundwater quality and increased litter;	To meet national and EU targets on the recycling of municipal waste and its diversion from landfill.	Volume of waste recycled and volume of waste sent to landfill.	MTC/CCC	Annually

Issue	Objective	Impact	Target	Indicator	Responsibility	Frequency
<b>Water</b>						
W1i	Maintain or improve the quality of surface water to meet the requirements of the South Western River Basin Management Plan (SW RBMP) and Programme of Measures (POMs)	Negative impacts to surface water quality, fisheries and aquatic biodiversity	0 Faecal Coliform Counts per 100ml of groundwater.	Faecal Coliform Counts per 100ml of groundwater.	EPA MTC/CCC	
W1ii			To improve biotic quality ratings, where possible to Q5.	Changes in water quality as identified during water quality monitoring programmes.	EPA MTC/CCC	As per monitoring cycle in accordance with the WFD monitoring programme
W2i	To maintain and improve, where possible, the quality of rivers, lakes and surface water.	Negative impacts to surface water quality, fisheries and aquatic biodiversity; Poor quality water	To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015.	Biotic Quality Rating (Q Value) and Risk Assessment.	EPA MTC/CCC	Annually
W2ii			To improve biotic quality ratings, where possible, to Q5.	Biotic Quality Rating (Q Value) and Risk Assessment.	EPA MTC/CCC	Annually
W3	To maintain and improve where possible, the quality of estuarine and coastal waters.	Poor quality water; Negative impacts to fisheries and aquatic biodiversity;	To maintain or to improve trophic status, where relevant, to unpolluted in line with the requirement to achieve good water status under the Water Framework Directive, by 2015.	Trophic Status (ATSEBI)	EPA MTC/CCC	Annually
W4a	To prevent pollution and contamination of bathing water.	Poor quality water; Negative impacts to fisheries and aquatic biodiversity and human health	≤ 5,000 Total Coliform Counts per 100ml of bathing water.	Total Coliform Counts per 100ml of bathing water.	MTC	Annually
W4b			≤ 1,000 Faecal Coliform Counts per 100ml of bathing water.	Faecal Coliform Counts per 100ml of bathing water.	EPA CCC	Annually
<b>Air and Climate</b>						
A 1	To maintain and improve air quality in Macroom	Poor Air quality and increasing contributions to climate change through greenhouse gas emissions	Maintain or improve levels of ambient SO <sub>2</sub> , NO <sub>x</sub> and particulate matter	Air quality standards of SO <sub>2</sub> , NO <sub>x</sub> and PM <sub>10</sub>	MTC/CCC	Review during the lifetime of the Plan



Issue	Objective	Impact	Target	Indicator	Responsibility	Frequency
<b>Energy</b>						
E1	Use of renewable energy technology for projected power requirements over the lifetime of the Plan	Poor Air quality and increasing contributions to climate change	Encourage use of renewable energy for domestic and small businesses. Use of renewable energy to supply National Grid where applicable	Number and type of renewable energy technologies employed in new developments	MTC/CCC	Review during the lifetime of the Plan
<b>Material Assets</b>						
M1	To serve new development under the plan with appropriate wastewater treatment.	Inadequate WWT for increased population; poor quality water and contamination	No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the plan.	Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the plan.	CCC NRA	Review during the lifetime of the Plan
M2	To maintain and improve the quality of drinking water supplies.	Overuse of resources potentially resulting in inadequate water supply during the lifetime or post 2015.	To maintain and improve drinking water quality in Macroom to comply with the requirements of the European Communities (Drinking Water) Regulations 2000.	Drinking water quality standards (Microbiological, Chemical and Indicator parameters).	EPA MTC/CCC	Review during the lifetime of the Plan.
<b>Cultural Heritage</b>						
CH1	To protect the archaeological heritage of Macroom and; the context of the above within the surrounding landscape where relevant.	Impacts to RPS, RMPs, ACAs and the townscape of Macroom	No unauthorised developments permitted over the lifespan of the plan which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the	Number of unauthorised developments permitted over the lifespan of the plan which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding	CCC Heritage Section Cork Heritage Forum DoEHLG	Review each planning application as submitted

Issue	Objective	Impact	Target	Indicator	Responsibility	Frequency
			surrounding landscape where relevant.	landscape where relevant.		
CH2	To preserve and protect the special interest and character of Macroon 's architectural heritage and the context of the above within the surrounding landscape where relevant.	Impacts to RPS, RMPs, ACAs and the townscape of Macroon ; Visual impact to the streetscape of Macroon	No unauthorised developments permitted over the lifespan of the plan which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.	Number of unauthorised developments permitted over the lifespan of the plan which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.	CCC Heritage Section Cork Heritage Forum DoEHLG	Review each planning application as submitted
<b>Landscape</b>						
Li	To protect Macroon 's sensitive landscapes, landscape features and designated scenic routes and landscape	Visual impacts to the landscape	No unauthorised developments to be conspicuously located within sensitive landscapes or designated scenic landscape.	Number of unauthorised conspicuous developments located within sensitive landscapes or designated scenic landscape.	MTC/CCC	Review each planning application as submitted.
Lii			No unauthorised developments to adversely impact upon designated scenic views or scenic landscape.	Number of unauthorised conspicuous developments adversely impacting upon designated scenic views or scenic landscape.	MTC/CCC	Review each planning application as submitted



## 11 NON-TECHNICAL SUMMARY

### 11.1 BACKGROUND

This is a Strategic Environmental Assessment (SEA) for the Macroom Town Development Plan.

The previous Macroom Town Plan sets out the overall strategy for the development of Macroom town and was adopted in 2003 and remained in force until 2009.

Macroom Town Council prepared a new Town Development Plan under the Planning and Development Act (2000) which requires the Planning Authority to prepare a "Development Plan" every six years for its jurisdiction.

As part of this development plan process, RPS Group Plc. undertook this Strategic Environmental Assessment (SEA), which is intended to identify and assess the issues facing the Macroom Town Council area going forward. This Environmental Report will be made available to the public along with the Adopted Macroom Development Plan. The Environmental Report has guided the preparation of objectives, policies and development scenarios for the Development Plan with an ultimate goal of achieving sustainable development within the Macroom Town Council area.

The SEA process was undertaken in parallel with each stage of the Plan making process and involved close consultation and meetings with the SEA Consultation Authorities, members of the National Building Agency Ltd. that drafted the Macroom Town Development Plan 2009 - 2015, the SEA team and a number of specialists who focused on the significant environmental issues of the plan as identified during the screening and scoping phases and assessment of baseline information for the area.

### 11.2 PROJECT OBJECTIVES AND METHODOLOGY

This Environmental Report provides a Strategic Environmental Assessment (SEA) of the Macroom Town Development Plan, including its main objectives and policies.

The SEA process as illustrated in Figure 1.1 aims to:

- Integrate environmental factors into the decision making process;
- Improve the updated Plan and enhance environmental protection; and
- Facilitate openness and transparency in the decision making process.

### 11.3 STRATEGIC ENVIRONMENTAL ASSESSMENT STAGES

- **Screening of Plans and Programmes** establishes whether the relevant plan or programmes must undergo an SEA, in this case Macroom Town Council determined during their screening process in October 2007 that an SEA was warranted.
- **Scoping of the Environmental Report:** The competent authority, in this case Macroom Town Council, must give notice to the environmental authorities that they are preparing an environmental report on the significant effects of implementing the Plan. The three statutory consultees were notified in June 2008 that the SEA process had started and their views were sought.
- An **Environmental Report** – Macroom Town Council commissioned RPS in May 2008 to continue the SEA process and prepare an Environmental Report. The Environmental Report investigates, describes and evaluates the likely significant effects on the environment of implementing the Town Plan.

Specifically, the aim of this Environmental Report is to identify:

- Existing environmental issues in Macroom Town;
- The likely significant effects on the environment when the new Town Plan is implemented;
- How the impact on the environment can be reduced or prevented; and
- How to monitor environmental impacts over the lifetime of the Town Development Plan.

A **Consultation period** on the Draft Plan and associated Environmental Report will be carried out between the 11<sup>th</sup> of September 2008 until the 21<sup>st</sup> of November 2008 when the Plan and report will be available for public viewing at Macroom Town Council's office. The public can submit their written observations/comments on the documents during this time and all submissions must be submitted to the Town Manager, Macroom Town Council, by the 21<sup>st</sup> of November 2008.

An **SEA Statement** – when the updated Town Plan is adopted an Environmental Statement identifying how environmental considerations and consultations were integrated into the Final Plan will be made available to the public and available to view at Macroom Town Council's office.

#### Environmental Baseline

The following sections describe the baseline, or existing environmental conditions collected and assessed for each of the topics required under the SEA Directive i.e. biodiversity, population and human health, flora and fauna, water, soil, air and climate, material assets, cultural heritage, transportation and landscape. It was considered necessary to combine some topics in order to avoid unnecessary duplication.



As required by the SEA Directive, the environmental report also comments on the likely evolution of the various indicators in the absence of the implementation of the preparation of the Macroom Development Plan 2009 - 2015.

The key findings of the baseline survey are described below and full details can be found in Chapter 5 of the Environmental report.

### **Biodiversity, Flora and Fauna**

A number of designated sites are present in the vicinity of the town. A section of the Gearagh proposed Natural Heritage Area (pNHA) and candidate Special Area of Conservation (cSAC) lies within Macroom town boundary (see section 5.1.2.3 for description of terms). The Gearagh is a unique site as it is the largest area of alluvial woodland in Europe west of the Rhine. This habitat (Residual Alluvial Forest (91EO)) is listed, with priority status, on Annex I of the E.U. Habitats Directive (NPWS, 2008).

The Sullane River rises to the west of Baile Bhuirne (Ballyvourney) and drains the agricultural catchment to the west of Macroom town. Several significant rivers drain into the Sullane River including the Foherish River to the west of Macroom and the Laney River to the east. In addition, Macroom features a number of streams. These occur to the north of the plan area, and run in a north-south direction. Two of the streams feed into the Sullane, while the third stream flowing to the east of Macroom, feeds into the Laney. These watercourses represent an important environmental resource in Macroom. The Sullane River flows through Macroom and drains into the Lee Valley Reservoir downstream.

### **Population and Human Health**

The 2006 Census of population identified a population of 3,407 within the Town Council boundary area reflecting a rate of population growth in line with the national average. According to the Cork Area Strategic Plan population projections for Macroom Urban District projects an annual net increase of some 120 persons per annum. This would signify a population increase of 960 between 2006 and the end of the plan period at 2015. This would allow for a total population of 4,367 by 2015 in accordance with CASP.

Sufficient lands will be rezoned for residential, employment and community uses within the town development boundary in line with national, regional and local population projections, which will contribute to the generation of critical mass within the town of Macroom. The proposed plan should help to facilitate the growing population of Macroom in a sustainable manner and in accordance with various policies and objectives of both national and local plans.

### **Soil and Geology**

The town of Macroom is situated within a sedimentary geological setting. The underlying rock comprises of bedded sediments from the Birdhill Formation and Caha Mountain Formation.

According to the GSI, the underlying aquifer is classified as a poor aquifer (PI), considered to be generally unproductive except for local zones. Such an aquifer is capable of yielding only enough water to springs and boreholes to supply single houses, small farms or small group water schemes. The GSI vulnerability rating in the Macroom Town area is extreme and extreme with rock near the surface.

At present there are no mining activities being carried out in the Macroom area. However quarrying is ongoing at numerous locations in the vicinity of Macroom.

### **Water**

Macroom town lies along the River Sullane, which enters the River Lee to the south east of the town centre. The River Laney also can be found merging with the River Sullane to the east of the town centre. To the south of Macroom the River Lee flows from west to east particularly at the reservoir at Carrigadrohid.

Currently the the River Lee (Carrigadrohid Reservoir) and river Sullane is classified as "Possibly at Risk of Not Achieving Good Status" and groundwater in the town centre of study area is considered "probably at risk of not achieving good status" for groundwater

There are a variety of activities both within and outside the study area, which have the potential to impact on water quality. These include sewerage treatment works, domestic water treatment systems, housing, construction work, industry, landfill, spillages, increased road runoff and agriculture.

Macroom has not suffered from any major flooding problems in recent year. The most notable incident occurred in August of 1986, where the River Sullane and Laney bursts their banks causing major damage to agricultural land, business property and private dwellings alike. Flooding was caused by extended periods of heavy rain causing the rivers to spread in alternative directions.

### **Air and Climate**

Sustainability is a key constraint for future development. Emissions to the atmosphere, energy consumption and climate change are all interlinked. Future developments should give consideration to passive design and clean and energy efficient technologies such as renewables, district heating and co-generation.

In Ireland the transport sector is the fast growing contributor of GHG emissions. A reliable efficient public transport system within the Macroom area would reduce car dependence and combat rising CO<sub>2</sub> emissions from vehicle exhausts.

Macroom is an area of high visual amenity. It will be important to ensure that for future energy developments and the associated infrastructure does not impact adversely on the landscape. Macroom urban area has been identified as a strategically unsuitable zone for wind development in the Cork County Development Plan.



Locally the burning of plastic in gardens is an issue of concern in relation to air quality

### **Material Assets**

**Wastewater Treatment** - The existing wastewater plant is currently at capacity and the area is prone to occasional flooding. The Masseytown Pump Station located on the western bank of the River Sullane is also prone to overflows during storm events due to inadequate storm storage, however work has been carried out recently to upsize the storm capacity of the pump station. It is proposed to upgrade the waste water treatment plant for the area, Barry & Partners Consulting Engineers are preparing a preliminary report for the sewerage scheme for Macroom Town Council which will be August 2008. Recommendations are to include the upgrading of the existing wastewater plant to increase treatment capacity and the provision of additional storage capacity at Masseytown Pump Station where upsized pumps will be required should more development occur in the catchment of this pump station.

**Water Supply** - At present there is adequate water supply in the town. However there is not sufficient water supply for the town in terms of the towns population projections for the Macroom Town Development Plan 2009 – 2015. Therefore there are long-term water capacity issues within the town. The development plan also highlights that an additional reservoir may be needed to the north of the town to service the growing population north of the town.

**Transport** - Presently the N22 passes through the centre of Macroom with high volumes of traffic at peak hours causing major traffic congestion due to the inadequate infrastructure. Therefore a new Macroom Bypass running from the Hartnett Cross area travelling north of the town and west to the Carrigaphooca area is proposed. The Plan states that the Macroom bypass is the most important development proposed in terms of transport infrastructure. The project proposed by the National Roads Authority and Cork County Council is for a two-lane by-pass. An EIS is currently being undertaken on the proposed route therefore it is considered that any potential impacts will be highlighted and mitigated against through the implementation of Environmental Impact Assessment (EIS). A 100 metre wide corridor has been agreed for this route. Other constraints within the study area include congestion within the Town Centre especially during the summer months, lack of cycle routes and parking.

### **Cultural Heritage**

There are a number of structures listed for protection in the Record of Protected Structures (Macroom Development Plan, 2009). These structures range from shops, bars, post offices and houses. In addition, there are a number of proposed structures listed for protection in the Record of Protected Structures within the Development Plan.

The built heritage of County Cork and Macroom town is also offered protection through the designation of Architectural Conservation Areas (ACAs). Most of the Town Centre of Macroom is designated as an ACA.

There are a number of monuments and places recorded within the boundaries of Macroom Town. It is deemed that the Plan area is of high archaeological potential due to the potential for the presence of hitherto unknown sub-surface archaeological remains. This determination is based on the presence of substantial archaeological remains from many periods of the past within the Town Council area.

Currently there are two tree preservation orders in the Macroom Town Development Plan 2009 – 2015. Policy NE3 proposes to secure Tree Preservation Orders for the following:

- Mature woodland north of the ruins of Codrum House
- Mature woodland east of the ruins of Mount Hedges

### **Landscape**

The Macroom Town Council landscape type comprises primarily of Valley Marginal Middle ground and partially of Hilly River and Reservoir Valley to the southwest by the Gearagh. In terms of landscape character Macroom is considered to comprise primarily of Broad Middle Valley of Semi-Rugged Mosaic Hills and Rock and partially of Alluvial Flood Plain and Reservoir in Patchwork Valley to the south west of the town at the edge of The Gearagh. Much of the north and south of the town is elevated and parts of the town to the west and south west is designated as scenic landscape in the Cork County Development 2003, there are also vast areas of trees, protected trees and hedgerows surrounding the town.

It is considered that much of the lands surrounding the town are of high landscape character. Elevated lands to the north and south of the town are sensitive to development. Lands to the east and south east of Macroom town are designated as Scenic Landscape in the Cork County Development Plan 2003 and Cork County Development Plan 2007. Two scenic routes are located in close proximity to the town and there are also a number of locally important views as outlined above. In addition The Gearagh is located to the south west of the town and is designated as a cSAC and SPA.



## 11.4 CONSIDERATION OF ALTERNATIVES

Article 5 of the SEA Directive requires the environmental report to consider "*reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme*" and the significant effects of the alternatives selected.

Therefore as part of the SEA process three different development strategies for the Plan area were assessed in order to determine the preferred development strategy for the Plan area with the least environmental effects. The three alternatives considered included a 'Do-nothing' option, an option to 'Rezone sufficient lands in accordance with national, Regional and Local projections'; and an option to 'Extend new development zonings on Greenfield lands'. The preferred option set out in the SEA was to rezone sufficient lands in accordance with national, Regional and Local population projections through the intensification and consolidation of the existing Town Centre, redeveloping brownfield sites and Greenfield sites only where there is a natural extension to existing zoning. It was considered that this option would have positive impacts on the Macroom Town Council area as it would allow the rejuvenation of existing derelict sites, which would improve the town's architectural character and townscape and consequently improve its tourist function. It would also be likely to have a positive impact on existing residents and traders of the town. Therefore the development strategy for the town is to rezone sufficient lands in accordance with national, Regional and Local projections as the preferred development strategy for the Macroom Town Development Plan 2009 - 2015.

## 11.5 SIGNIFICANT EFFECTS AND MITIGATION

The likely significant effects of the Plan have been informed by trends and potential impacts as identified in the review of European, National, Regional and Local planning and environmental legislation and guidance documents, existing environment as indicated from the environmental baseline study and from impacts arising from the assessment of policies and objectives of the Plan. This process enabled an overview of where potential environmental trends and impacts may arise from implementation of the draft Plan and allowed for a cross check and where necessary provision of additional mitigatory measures including provision of new policies/objectives to be incorporated where possible in the draft Plan.

Table 11.1 (also 9.1) below links potential trends and impacts with significant effects to the relevant proposed mitigation measures and proposed monitoring measure.



**Table 11.1: Significant Effects, Proposed Mitigation Measures and Proposed Monitoring of draft Macroroom Town Development Plan**

Trend and Potential Impacts	Significant Effects	Mitigation Measures (and reference to where addressed in the draft Plan)	Monitoring (Table 10.1)
<p><b>Biodiversity</b></p> <p>There is potential for impacts to the aquatic environment in the form of industrial and agricultural run-off, municipal sources of pollution, bridge building, fragmentation of river corridors and soil erosion. These risks apply in particular to the Sullane River. Under the Water Framework Directive, water quality must achieve "good status" by 2015.</p>	<p>Possibly significant if not mitigated</p>	<p>Policy NEP3 commits to protect and enhance the quality of watercourses through the promotion of Sustainable Urban Drainage Systems (SUDS).</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: B2, W1, W3, W4</p>
<p>The Gearagh cSAC, pNHA and SPA and River Sullane may come under pressure from a number of sources, notably from increased recreation and tourism developments, and additional infrastructural development including through increased surface runoff and potential impacts to groundwater quality.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommendation to maintain the conservation value of The Gearagh (Ramsar site, SPA, cSAC and pNHA) during the lifetime of this plan and to ensure Appropriate Assessment is carried out where development projects are likely to have significant effects on this Natura 2000 site whether within or outside the boundary of the designated site.</p> <p><b>This is fully addressed by Policy NEP8.</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: B1, B2, W1, W3, W4</p>
<p>Invasive species: There is potential for invasive species to enter surface waters from a number of sources including runoff from garden centres, from boats and by dumping of waste from fish tanks and garden ponds. There is therefore a need to include a policy in the new plan to prevent the introduction of those alien species which threaten ecosystems, habitats or species. The utilisation of native species in amenity planting and stocking along with change in community actions to reduce the introduction and spread of non-native species should be encouraged.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends a policy for protection against invasive species is required in the new Macroroom Town Plan.</p> <p><b>Policy NEP9 provides protection for native flora and fauna against non-native species.</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: B1 B2</p>
<p>Removal of Ecological Corridors: The removal of ecological networks / corridors is a significant issue. It is recognised that there has been a significant increase in hedgerow removal throughout Ireland in recent years.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommends that the plan should include specific buffer zones so as to protect features of European, national, regional county and local importance including rivers and streams from development proposals both in terms of visual and ecological impacts.</p> <p><b>Policy NEP2 ensures that the River Sullane and its tributaries, including their riparian corridors and associated habitats and species, are protected.</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: B1, B2</p>
<p>The N22 Macroroom bypass may have potential</p>	<p>Possibly significant if not</p>	<p>SEA recommends a policy to undertake environmental appraisals or</p>	<p>Refer to Monitoring Programme As</p>



<p>impacts on flora and fauna and habitats within or close to the town boundary. However these issues have been addressed in the EIA for the scheme. It is important that the mitigation and monitoring measures prescribed in the EIS are adhered to.</p>	<p>mitigated</p>	<p>Environmental Impact Assessments and Appropriate Assessments in areas within or likely to affect cSAC's and SPAs; i.e. new roads and other infrastructure, other major developments, etc.</p> <p><b>This is adequately addressed by Policy NEP8</b></p> <p>SEA recommends inclusion of a policy for the preparation of a habitat map (including wetlands) of the town.</p> <p><b>No policy for preparation of habitat map in the draft Plan</b></p> <p>The Town Plan, should include an objective to ensure development in the Macroom area and the provision of services (e.g., roads, wastewater and waste related services etc.) in the Macroom area take into account the Management Plan, where, available, for Gearagh cSAC/SPA.</p> <p><b>Policies NEP8 partly addresses this requirement however does not take account of the management Plan for the Gearagh.</b></p>	<p>Indicated In Table 10.1: B1, B2, M1 and M2</p>
<p><b>Population and Human Health</b></p>			
<p>Provided planning applications granted in particular for residential developments to meet the projected population increases have the provision to provide good quality water and adequate wastewater treatment for such developments there is no predicted impacts to population and human health.</p>	<p>Possibly significant if not mitigated</p>	<p><b>Policies WSP11-WSP10 and WWP1-WWP5 in the draft Plan refer to water supply and wastewater services for existing and new development.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH2, M1,M2</p>
<p>The Plan provides for the provision of amenity and open space that improves quality of life. The Plan also promotes the increased use and provision of public transport and renewable resources in their construction. Provided there is compliance with these policies and standards housing development should not have a significant environmental impact.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends an objective to apply a phasing approach to development within the lifetime of this plan including monitoring of residential applications, which ensures that residential development only takes place to a point, which meets the population projections as set by the CASP population projection.</p> <p><b>Policies H1-H6 of the plan refers to land and development standards for new residential development.</b></p> <p><b>This is fully addressed by the Plan.</b></p> <p><b>Policies EP1-EP10 support employment; Policy HP5 supports social inclusion; policies CP1-CP7 and objectives C1-C8 provide for community services.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH2, M1,M2, L1</p>
<p>The Plan also promotes diverse employment opportunities, social inclusion and generation of communities all of which improve the quality of life.</p>			<p>Refer to Monitoring Programme As Indicated In Table 10.1: PH1, PH2</p>
<p><b>Soils</b></p>			
<p>New developments on greenfield sites involve changing the character of the ground and soil. New developments have the potential to contaminate the</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that the Draft Town development Plan should include a policy for the development of brownfield sites over Greenfield sites and should include for implementation of the</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: S1, S2, S3</p>



<p>developments have the potential to contaminate the soil and underlying groundwater, particularly in the case of septic tanks and poor wastewater treatment facilities. Existing activities such as agriculture and manufacturing may also pose a risk to soil and groundwater.</p> <p>Construction, agriculture and forestry can lead to soil erosion, which has negative effects on water quality and aquatic biodiversity. Soil erosion results in a loss of nutrients in the upper layers of the soils also leading to a reduced water-holding capacity. Soil erosion can also lead to sediment movement and agricultural pollution into watercourses. This can lead to increased solids in watercourses, disruption of ecosystems and contamination of drinking water.</p>	<p>Possibly significant if not mitigated</p>	<p>Greenfield sites and should include for implementation of the policies and objectives of the Soils Directive.</p> <p>The SEA recommends that where development does take place best practice should be implemented to prevent soil erosion and prevent escape of suspended solids into nearby watercourses</p> <p><b>Policy NEP12 requires new development to have regard to the Soil Directive.</b></p>	
<p>The frequent rock outcrops and the presence of rock close to the ground surface throughout the Study Area and particularly to the west of Macroom may be a constraint to road construction if excavation through rock for cuttings is required. This may be particularly pertinent to the areas of high ground west of Macroom.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends the inclusion of a policy for the Protection of Areas of Geological Interest.</p> <p><b>Policy NEP10 fully addresses this to ensure protection for areas of geological interest.</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: S2</p>
<b>Water</b>			
<p>In order to facilitate population and housing growth the plan promotes the protection of water quality and water supply through a number of policies and objectives including the provision of adequate infrastructure, upgrading of old water mains, metering of non domestic users, separation of foul and surface water effluents, promotion of SUDS.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends that the Plan should include a policy for a Groundwater Protection Plan for groundwater resources in the Macroom area in accordance with the Groundwater Protection Scheme for Cork County.</p> <p>Development in areas of extreme GW vulnerability should employ best practice to ensure that the underlying GW resource is protected.</p> <p>The plan should also continue monitoring of drinking waters and encourage sustainable water usage (in SUDS).</p> <p><b>Policies in the plan provide for this, specifically policy WSP2, WSP4, WSP5, WSP8, WSP9, WWP1, WWP2 and SWP3.</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: W1, W2, W3, W4</p>
<p>There are a variety of activities both within and outside the study area, which have the potential to impact on water quality. These include sewerage treatment works, domestic water treatment systems, housing, construction work, industry, landfill, spillages, increased road runoff and agriculture.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA promotes compliance with the Water Framework Directive and the implementation of Management Plans for the South Western region.</p> <p><b>Policy WSP2 and WSP7 comply with this.</b></p> <p>The SEA recommends that all construction of bridges, causeways or</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: W1, W2, W3, W4, W1, W2</p>



<p>similar in study area will adhere to best practices guidelines. in particular all NRA Guidelines for road design and construction. Bridge design will avoid in-stream works where possible and all plans will include lengths consultation with the South Western Regional Fisheries Board. There should be a policy to adhere to implementation of any proposed Draft Motorised Bye Laws in order to protect water quality in the River Sullane, Laney or Carrigadrohid Reservoir.</p> <p><b>Policy NP13 and WSP10 fully complies with this.</b></p> <p>The SEA recommends a new protection policy to "ensure that a survey for freshwater species, in particular freshwater pearl-mussel, is undertaken prior to the construction of any bridges in the area".</p> <p><b>Policy NP14 supports the undertaking of a survey for freshwater species prior to the construction of any bridges in the area.</b></p>		<p>similar in study area will adhere to best practices guidelines. in particular all NRA Guidelines for road design and construction. Bridge design will avoid in-stream works where possible and all plans will include lengths consultation with the South Western Regional Fisheries Board. There should be a policy to adhere to implementation of any proposed Draft Motorised Bye Laws in order to protect water quality in the River Sullane, Laney or Carrigadrohid Reservoir.</p> <p><b>Policy NP13 and WSP10 fully complies with this.</b></p> <p>The SEA recommends a new protection policy to "ensure that a survey for freshwater species, in particular freshwater pearl-mussel, is undertaken prior to the construction of any bridges in the area".</p> <p><b>Policy NP14 supports the undertaking of a survey for freshwater species prior to the construction of any bridges in the area.</b></p>	
<p>Specifically the existing problems within the Macroom area include:</p> <p>The river Sullane is classified as "Possibly at Risk of Not Achieving Good Status" and the town centre is considered "probably at risk of not achieving good status" for groundwater Impacts to Fisheries - Direct impacts to water will have indirect effects on fisheries.</p> <p>Flooding has not been identified as important particularly in relation to areas where land zoned for development is proposed near or adjacent to rivers or their floodplains. However the threat of climate change and global warming may have an influence over meteorological conditions such that to increase flooding in the study area. Strict control of planning will be required in these areas i.e. along the Sullane River Valley and the OPW's Guidelines on Flood Risk should be adhered to.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends maintaining high status or good status of waters where they exist and to achieve good quality status in all other waters by 2015. Good water is measured in quantity, quality and ecology for surface water and quantity and quality for groundwater.</p> <p><b>No specific policy in this regard, however a number of protective policies with regard to water courses and environment of the area under NEP Policies.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4, M1, M2</p>
<p>Flooding has not been identified as important particularly in relation to areas where land zoned for development is proposed near or adjacent to rivers or their floodplains. However the threat of climate change and global warming may have an influence over meteorological conditions such that to increase flooding in the study area. Strict control of planning will be required in these areas i.e. along the Sullane River Valley and the OPW's Guidelines on Flood Risk should be adhered to.</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA Notes that the OPW Flood Hazard Mapping identified flooding points in the study area. The SEA recommends that new development plan should have a policy to ensure that all new developments should have regard to areas that may be at risk from flooding. Flood Impact Assessment may be required at planning application stage to identify potential loss of flood plain storage and how it is to be offset in order to minimise the impact on the river flood regime at application stage.</p> <p><b>Policies SWP1 and SWP4 ensure mitigation measures to minimise risk of flooding and require new development to have regard to areas at risk of flooding.</b></p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1</p>
<p>There is a possibility of unchecked increase in demand for wastewater treatment with potential for increased pollution to surface waters. Therefore correct treatment of wastewater is an important factor to consider in the quality of surface water. It is essential that the WWTP operates to highest</p>	<p>Possibly significant if not mitigated</p>	<p>The SEA recommends monitoring the performance of wastewater treatment plants and the sewerage network to capture leakages to GW and SW. It is important to have an adequate wastewater collection system infrastructure in place to cope the increased population increase as outlined in the NSS. The Plan should adhere to the principles of WWTS Bye Laws in order to protect water quality</p>	<p>Refer to Monitoring Programme As Indicated In Table 10.1: W1, W2, W3, W4, M1, M2</p>



standards and that monitoring of the performance of wastewater treatment plant and sewerage network is undertaken to capture leakages to GW and SW.		and ensure that WWTP comply with EPA Manuals. Policies WW01-WW05 fully comply with this.	
<b>Air and Climate</b>			
As the population of Macroom continues to grow in the future, there is a need to ensure that growth is planned for and that there are sufficient and appropriate lands zoned to accommodate such growth. A sustainable transport system is required to reduce car dependence and reduce GHG emissions. Sustainable construction and design in addition to clean and energy efficient technologies should be encouraged at design stage. Perhaps planning applications and designs with renewable energy aspects could be given preferential consideration.	Possibly significant if not mitigated	The SEA recommends that sustainable forms of development and sustainable sources of energy should be encouraged in the new plan. There is a need to include a policy on sustainable buildings (Housing and commercial buildings) within the new plan.  <b>This is fully addressed by Policy TP, energy Policies EP4 EP6.</b>	<b>Refer to Monitoring Programme As Indicated In Table 10.1: A1</b>
The development of a Macroom bypass would alleviate greenhouse gases in the town centre. The bulk of commuter traffic and freight traveling from Cork to Kerry will no longer pass through the town, thereby removing congestion borne emissions from Macroom town centre. Vehicle traveling on a bypass would travel non stop and in a higher gear, thus using fuel more efficiently and reducing emissions.	Positive impact		<b>Refer to Monitoring Programme As Indicated In Table 10.1: A1</b>
Sustainable forms of development and sustainable sources of energy should be encouraged in the new plan. There is a need to include a policy on sustainable building within the new plan.	Possibly significant if not mitigated	The SEA recommends that the plan should encourage utilisation of energy efficient technology in office and apartment block developments.  The SEA recommends that Sustainable design should be encouraged for all new builds, which should incorporate clean and energy efficient technologies such as solar panels to provide hot water, high levels of fabric insulation, solar gain, and natural ventilation to reduce heating and cooling loads and maximise energy efficiency. Existing vegetation and future landscaping are important considerations for site selection. The minimisation of waste production during the construction process and provision for recycling of construction and demolition waste is another key factor in the design of sustainable building.	<b>Refer to Monitoring Programme As Indicated In Table 10.1: E1</b>
Future considerations should include examining the feasibility of district energy systems for public buildings and the Macroom urban area in general, such as combined heat and power and district heating, particularly for new developments. The	Not significant	<b>Energy polices EP4 to EP6 fully with this.</b> <b>The SEA recommends</b> There is also a need to ensure a policy is in place to protect Macroom from Windfarm development as outlined in the Cork County Development Plan 2003-2009.  <b>Policy EP6 promotes sustainable sources of energy.</b>	<b>Refer to Monitoring Programme As Indicated In Table 10.1: E1</b>



<p>main advantages of district heat systems include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fewer emissions in densely populated areas;</li> <li><input type="checkbox"/> Less individual boilers;</li> <li><input type="checkbox"/> Higher energy efficiency and lower CO<sub>2</sub> emissions; and</li> <li><input type="checkbox"/> Reaching Higher Building Energy Rating Targets.</li> </ul>		<p>There is no policy in the plan with regard to Windfarms.</p>	
<p><b>Material Assets</b> Transport</p>			
<p>Presently the N22 passes through the centre of Macroom with high volumes of traffic at peak hours causing major traffic congestion due to the inadequate infrastructure. Therefore a new Macroom Bypass is proposed. The project proposed by the National Roads Authority and Cork County Council is for a two-lane by-pass. A 100 metre wide corridor has been agreed for this route. Other constraints within the study area include congestion within the Town Centre especially during the summer months, lack of cycle routes and parking.</p>	<p>Possibly significant if not mitigated</p>	<p>This is fully addressed by Policies T1 – T11</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: A1</p>
<p>The main aim for Macroom Town is to grow in a compact and sustainable manner. One of the key objectives objective is therefore to encourage continued growth in employment and services in the town. However if the town is to continue to grow and prosper its transportation linkages to other economic nodes need to be significantly improved.</p>	<p>Positive impact</p>	<p>This is fully addressed by Policies T1 – T11</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: A1, PH2</p>
<p><b>Wastewater Treatment</b></p>			
<p>The existing wastewater plant is currently at capacity. However it is proposed to upgrade the waste water treatment plant for the area. Barry &amp; Partners Consulting Engineers are preparing a preliminary report for the sewerage scheme for Macroom Town Council which will be August 2008. Recommendations are to include the upgrading of the existing wastewater plant to increase treatment capacity and the provision of additional storage capacity at Masseytown Pump Station where upsized pumps will be required should more development occur in the catchment of this pump station.</p>	<p><b>Possibly significant if not mitigated</b></p>	<p>This is fully addressed by Policies WWMP1 to WWMP5</p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: M1</p>

**Water Supply**

At present there is adequate water supply in the town. However there is not sufficient water supply for the future of the town's needs. Therefore there are long-term water capacity issues within the town and an additional reservoir may be needed to the north of the town to service the growing population of the town. Therefore policies should be included in the plan to monitor water supply and ensure future provision for population projections.

Possibly significant if not mitigated

SEA Recommends that following new Policies to be included within the Plan:

Outline a timeframe for the Waste Water Treatment Plant Upgrade.

**A timeframe has not been identified within the draft Plan**

Ensure no development takes place in the absence of the Waste Water Provision.

**This is fully addressed by Policy WWPP2**

The Plan should include a policy to ensure that all developments currently served by septic tanks should be connected to the WWTP where possible.

**This is fully addressed by Policy WWPP3**

To ensure separation of foul and surface water effluents through the provision of separate collecting networks and to ensure that all new developments provide separate collecting systems.

**This is fully addressed by Policy WWPP1**

Include a policy as per the Department of the Environment, Heritage and local Government (DoEHLG) policy, whereby: Storm water will not be combined with foul networks and all future development will provide soakways or separate storm networks.

**This is fully addressed by Policy WWPP4**

Policies should be included in the plan to monitor water supply and ensure future provision for population projections.

**This is fully addressed by Policy WSP1/WSP2**

Include specific objective for the preparation of a Water Conservation Strategy for Macroom town and surrounding area as appropriate.

**This is fully addressed by Policy WSP6**

Refer to Monitoring Programme As Indicated In Table 10.1:  
M2, M1, W1, W2, W3, W4

**Cultural Heritage**

Developments or works which occur in close proximity to archaeological monuments would have potential to impact existing archaeological

Possibly significant if not mitigated

SEA recommends the following new Policy to be included in the plan:

Refer to Monitoring Programme As Indicated In Table 10.1:  
CH1, CH2



<p>monuments through disturbance or destruction of the monuments. New developments that are adjacent to and/or alterations/extensions to existing protected structures also need to be carefully managed to ensure that the cultural heritage of such areas are not disturbed or negatively impacted upon.</p>		<p><input type="checkbox"/> Any direct impacts on national monuments in State or Local Authority care or subject to a preservation order will require the consent of the Minister for the Environment, Heritage and Local Government under Section 14 of the National Monuments Act 1930 as amended by Section 5 of the National Monuments (Amendment) Act 2004.</p> <p><b>This is fully addressed by Policy AP5</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: CH1, CH2</p>
<p>It is deemed that the Plan area is of high archaeological potential. This determination is based on the presence of substantial archaeological remains from many periods of the past within the development area.</p> <p>In addition to the Record of Protected Structures, structures of architectural heritage merit, although not put forward for inclusion in the Record of Protected Structures (RPS) may continue to contribute to the identity of a locality and should be taken into account in the preparation of the Development Plan. The Macrocom area is unique in form and character. The contribution of any features, which give identity to and enhance that uniqueness, should be given recognition in the Development Plan.</p>	<p>Possibly significant if not mitigated</p>	<p>Any potential impacts on archaeological heritage should be subject to full archaeological assessment. (i.e. not just medium to major scale developments as noted in the plan).</p> <p><b>This is fully addressed by Policy AP4</b> it is recommended that maps indicating RMP's, RPS's and other elements of cultural heritage should encapsulate the entire town rather than just the town centre.</p>	
<p><b>Landscape</b></p>			
<p>It is considered that much of the lands surrounding the town are of high landscape character. Elevated lands to the north and south of the town are sensitive to development. Lands to the east and south east of Macrocom town are designated as Scenic Landscape in the Cork County Development Plan 2003 and Draft Cork County Development Plan 2007. Two scenic routes are located in close proximity to the town and there are also a number of locally important views as outlined above. In addition The Gearagh is located to the south west of the town and is designated as a cSAC and SPA. The policies and objectives for landscape protection in the Plan are generally positive.</p>	<p>Possibly significant if not mitigated</p>	<p>SEA recommends the following new policies to be included in the plan:</p> <p><input type="checkbox"/> New Developments in the plan area should have cognisance to the A89, A90 and A91 Scenic Routes in the Cork County Development Plan 2003 (S72/S73/S74 Scenic Routes in the Draft Cork County Development Plan 2007).</p> <p><b>This is fully addressed by Policy NEP15</b></p>	<p>Refer to Monitoring Programme As Indicated in Table 10.1: L1</p>

## 11.6 MITIGATION AND MONITORING

Mitigation involves ameliorating significant negative environmental effects. This Environmental Report highlighted several potential adverse effects on the environment as a result of implementing the updated Plan. Specific mitigation measures were identified and are outlined in the Table below.

Monitoring indicators have been devised in order to measure the effectiveness of the Plan and of the mitigation measures prescribed in this Environmental Report, and are also presented in the table below:



## Appendix 1 – Designated Sites

### Site Synopsis

**Site Name: Mullaghanish to Musheramore Mountains SPA**

**Site Code: 004162**

The Mullaghanish to Musheramore Mountains SPA comprises a substantial part of the Boggeragh/Derrynasaggart Mountains. It is divided roughly into two sectors by the R582 road between Macroom and Millstreet. Most of the site is over 200 m in altitude, rising to heights of 475 m in the eastern sector (Musherabeg) and 462 m in the western sector (Knockullane). Several important rivers rise within the site, notably the Foherish and Awboy. The site is underlain by Old Red Sandstone.

The site consists of a variety of upland habitats, though approximately one-third is afforested. The coniferous forests include first and second rotation plantations, with both pre-thicket and post-thicket stands present. The principal tree species present are Sitka Spruce (*Picea sitchensis*) and Lodgepole Pine (*Pinus contorta*). Almost one-third of the site is unplanted blanket bog and heath, with both wet and dry heaths present. The vegetation is characterised by such species as Ling Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Bilberry (*Vaccinium myrtillus*), Common Cottongrass (*Eriophorum angustifolium*), Deergrass (*Scirpus cespitosus*) and Purple Moor-grass (*Molinia caerulea*). The remainder of the site is mostly rough grassland that is used for hill farming. This varies in composition and includes some wet areas with rushes (*Juncus* spp.) and some areas subject to scrub encroachment.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier.

This SPA is a stronghold for Hen Harrier. A survey in 2005 resulted in 5 confirmed breeding pairs, which represents over 3% of the national total. A similar number had been recorded in the 1998-2000 period. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the Birds Directive. The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. In Ireland, small birds and small mammals appear to be the most frequently taken prey.

The site also supports a breeding population of Merlin, a species that is also listed on Annex I of the E.U. Birds Directive. The population size is not well known but is likely to be one or two pairs.

The main threat to the long-term survival of Hen Harriers within the site is further afforestation, which would reduce and fragment the area of foraging habitat, resulting in possible reductions in breeding density and productivity.



Overall, the site provides excellent nesting and foraging habitat for breeding Hen Harrier and is an important stronghold for the species.

22.5.2007

**Site Name: The Gearagh SPA**

**Site Code: 004109**

The Gearagh, located c. 2 km south-west of Macroom, Co. Cork, comprises a stretch of the River Lee that was dammed in the 1950s as part of a hydroelectric scheme. The river valley formerly held an extensive area of alluvial forest but only part of the forest now survives. The SPA extends from Annahala bridge westwards to Toon bridge. The principal habitat is a shallow lake or reservoir which is fringed by wet woodland, scrub and grassland that is prone to flooding. Alluvial forest occurs on islands. At times of low water, a diverse pioneering plant community develops on the mud.

The alluvial forest is mostly confined to alluvium islands. It consists of an almost closed canopy of Pedunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*) and Birch (*Betula* spp.). The understorey is of Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*). Willows (*Salix* spp.) and Alder (*Alnus glutinosa*) are largely confined to channel margins and waterlogged areas. The ground flora reflects the damp nature of the woodland and includes such species as Ramsons (*Allium ursinum*), Wood Anemone (*Anemone nemorosa*), Bugle (*Ajuga reptans*), Pignut (*Conopodium majus*), Irish Spurge (*Euphorbia hyberna*) and Meadowsweet (*Filipendula ulmaria*). Scarce plant species recorded from within the woodland include Wood Club-rush (*Scirpus sylvaticus*), Bird Cherry (*Prunus padus*), Buckthorn (*Rhamnus catharticus*) and Rough Horsetail (*Equisetum hyemale*). The epiphytic bryophyte flora and lichen communities are well-developed.

The reservoir has a varied aquatic plant flora that included at least five species of Pondweed (*Potamogeton* spp.). At low water levels, an ephemeral flora develops on the exposed mud and such species as Water Purslane (*Lythrum portula*), Knotgrasses (*Polygonum* spp.) including the scarce Small Water-pepper (*P. mite*), Marsh Yellowcress (*Rorippa palustris*) and Six-stamened Waterwort (*Elatine hexandra*) are found here. Extensive swards of Mudwort (*Limosella aquatica*), a plant listed in the Red Data Book, occur on the mudflats. The river channels grade into marginal alluvial grassland in places. These grasslands, as well as some semi-improved grasslands within the site, are grazed by wildfowl.

The Gearagh supports part of an important wintering bird population - the area most utilised by the birds also extends east of the site, towards Cork City (Carrigadrohid). Swans, dabbling duck, diving duck and some waders are present and the site provides both feeding and roost sites for the birds. Six of the species have populations of national importance (all figures are average peaks for the 5 winters 1995/96-1999/00): Mute Swan (192), Wigeon (1,080), Teal (1,194), Shoveler (36), Coot (308) and Golden Plover (1,918). Other species which occur regularly in substantial numbers include Whooper Swan (77), Gadwall (10), Mallard (584), Pochard (126), Tufted Duck (271), Lapwing (1,880) and Curlew (400). Other species which use the site include Goldeneye (23), Cormorant (26) and Grey Heron (12). A



feral Greylag Goose flock is present in the area. A few pairs each of Great Crested Grebe and Tufted Duck breed.

The Gearagh is a Nature Reserve, a Ramsar Convention site and a Council of Europe Biogenetic Reserve. There are no imminent threats to the wintering bird populations, though some disturbance is caused to the birds by illegal shooting.

The Gearagh SPA is a unique site due to the presence of remnants of one of the largest stands of alluvial woodland in Ireland or Britain. This habitat is listed, with priority status, on Annex I of the E.U. Habitats Directive. Scarce plant species recorded from within the woodland include Wood Club-rush (*Scirpus sylvaticus*), Bird Cherry (*Prunus padus*), Buckthorn (*Rhamnus catharticus*) and Rough Horsetail (*Equisetum hyemale*). The reservoir created by the past damming activities now attracts important populations of wintering waterfowl, with six of the species having populations of national importance. Also of note is that two of the species which occur regularly, Whooper Swan and Golden Plover, are listed on Annex I of the E.U. Birds Directive.

13.8.2004

**Site Name: The Gearagh cSAC and pNHA**

**Site Code: 000108**

This site is located on the River Lee in County Cork, extending westwards and southwards from the Lee Bridge, which is about 1.5km south of Macroom. It extends for about 7km of river, to Dromcarra Bridge. The Gearagh occupies a wide, flat valley of the River Lee, on a bed of limestone overlain with sand and gravel. The adjacent valley walls are of Old Red Sandstone.

This unusual area has formed where the River Lee breaks into a complex network of channels (2 to 6m wide) weaving through a series of wooded islands. The alluvial woodland which remains today at the Gearagh is of unique scientific interest, and qualifies as a priority habitat under Annex I of the European Habitats Directive. The area has probably been wooded throughout the Post-glacial era (i.e. since the end of the last Ice Age, which ended around 10,000 years ago) and frequent flooding has served to enhance its character. Originally, this area of alluvial woodland extended as far as the Lee Bridge. Unfortunately, in 1954/55, in the eastern part of the Gearagh, extensive tree-felling and flooding were carried out to facilitate the operation of a hydro-electric scheme. Around sixty per-cent of the former woodland was lost. Today, the reservoir covers the area from Lee Bridge to Annahala Bridge and westwards of Illaunmore Island.

The islands in the Gearagh consist of rather dry alluvium, and support an almost closed canopy of Pedunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*) and Birch (*Betula* spp.). The understorey is of Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*). Willows (*Salix* spp.) and Alder (*Alnus glutinosa*) are largely confined to channel margins and waterlogged areas. The ground flora reflects the damp nature of the woodland. In spring, Ramsons (*Allium ursinum*) and Wood Anemone (*Anemone nemorosa*) are abundant. Later in the year, other species appear, including Bugle (*Ajuga reptans*), Pignut (*Conopodium majus*), Irish Spurge (*Euphorbia hyberna*), Tufted Hairgrass



(*Deschampsia cespitosa*), Enchanter's Nightshade (*Circaea lutetiana*) and Meadowsweet (*Filipendula ulmaria*). Plants species of particular interest within the woodland are Wood Club-rush (*Scirpus sylvaticus*), Bird Cherry (*Prunus padus*) and Buckthorn (*Rhanmus catharticus*). These species are scarce in Ireland. The epiphytic bryophyte flora is well developed, as are some lichen communities. Variations in this vegetation occur locally, where drainage is impeded and where tree clearance has occurred. The whole area has a remarkably wild character, with many fallen trees blocking the channels, so that access both by foot and boat is difficult.

Within the reservoir, the former extent of the woodland can still be seen at times of low water: the cut stumps of larger trees remain prominently preserved in place. At least five species of Pondweed (*Potamogeton* spp.) occur in the reservoir, including two species which are uncommon in Ireland (*Potamogeton praelongus* and *P. gramineus*). At low water levels, a diverse ephemeral flora develops on the exposed mud. Species here include Water Purslane (*Lythrum portula*), Knotgrasses (*Polygonum* spp.), Trifid Bur-marigold (*Bidens tripartita*), Marsh Yellow-cress (*Rorippa palustris*) and Six-stamened Waterwort (*Elatine hexandra*).

An oakwood occurs just north of Toon Bridge. Although wooded from ancient times, today the area supports relatively young oaks (*Quercus* sp.) on a southerly slope. Apart from oaks, Silver Birch (*Betula pendula*), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*) and Rowan (*Sorbus aucuparia*) are also present. The ground flora is typical of that found in an oakwood, but is relatively species-rich, partly as a result of water seepage downslope. Species present include: Bilberry (*Vaccinium myrtillus*), Great Wood-rush (*Luzula sylvatica*), Hard Fern (*Blechnum spicant*), Buckler Fern (*Dryopteris aemula*), Woodruff (*Galium odoratum*), Wood Melic (*Melica uniflora*), Hairy Wood-rush (*Luzula pilosa*) and Early Purple Orchid (*Orchis mascula*).

Along the Gearagh, the river channels grade into marginal alluvial grassland in places. These grasslands, as well as some semi-improved grasslands within the site, are grazed by wildfowl. An area of cutaway bog and some Gorse (*Ulex* sp.) scrub also occur in the site. Extensive swards of Mudwort (*Limosella aquatica*), a Rare plant listed in the Red Data Book, occur on the mudflats along the reservoir. Otter, an Annex II species on the European Habitats Directive, is frequent throughout the site.

The Gearagh supports part of an important wintering bird population: the area most utilised by birds extends also east of the site, towards Cork city (Carrigadroighid). At the Gearagh, Whooper Swans are regular (40-110, 1990's), as are Wigeon (640, average max. 1992-1994), Teal (707, average max. 1992-94), Mallard (250 in January 1993) and Tufted Duck (154, average max. 1992-94). Golden Plover utilise the site on occasions (e.g. 2,000 in January 1994), while there is a regular flock of Dunlin (100-200, 1990s) a species unusual at inland sites. A late summering flock of Mute Swan is regular, with numbers between 120 and 250 from 1992 to 1994. Great Crested Grebe and Tufted Duck breed in small numbers, while there is a feral flock of about 50 Greylag Geese.

The wooded part of the Gearagh is largely undisturbed due to the inaccessible nature of the terrain. Cattle graze in some areas, but the impacts of this are very localised. In the past, coppicing was practiced over most of the area. Little felling has occurred since the early 1950's, and the installation of the hydro-electric scheme. The least disturbed part of woodland occurs in the upper reaches of the



Gearagh. Tree regeneration is occurring around the reservoir, which may restore some of the lost portion of woodland.

Despite the fact that about half the original area has been destroyed the Gearagh still represents the only extensive alluvial woodland in Ireland or Britain, or indeed Western Europe west of the Rhine. For this reason it is a unique site and has been designated as a Statutory Nature Reserve. The international importance of the site is recognised by its designation both as a Ramsar site and as a Biogenetic Reserve. The reservoir is also a Wildfowl Sanctuary.

9.1.1997

**Site Name: Lough Gal pNHA**

**Site Code: 001067**

This site is situated 22.5 km. north-west of Bandon near the small village of Bealnamorive. The outflow of the lough flows into the Glashgarriff River. A section of the river and its banks about 1 km. east of the lough is also a Natural Heritage Area for its waterfalls and interesting vegetation.

In 1986, An Foras Forbartha provided the following description of part of the site. Lough Gal is a little known lake now largely grown over by the fen at Curraghindaveagh. The plant communities include floating fen with some peat development especially in the south-west corner. Marshwort (*Apium inundatum*) and several pondweeds (*Potamogeton* sp.) occur on the lake.

The present Natural Heritage Area includes an extensive area of freshwater marsh with abundant willow (*Salix* sp.) scrub invasion.

A recent survey of the lake reports it to be a good site for wildfowl, ducks, geese and swans.

The main landuses within the site are grazing by cattle and boating, fishing and shooting on the lake.

This site contains unusual habitats for the area. The flora of the lough and surrounding wetlands also appear to be of interest.

**Site Name: Glashgarriff River pNHA**

**Site Code: 001055**

This site is situated 22 km. north north-west of Bandon, about 1 km. south of Bealnamorive Bridge and about 1 km. east of Lough Gal which is also a Natural Heritage Area.

This site consists of a small stream and wooded river valley. Conifer trees have been planted on both sides of the valley and the main woodland types included within the site are dry broad leaved woodland, mixed woodland and commercial forest.

In 1986 An Foras Forbartha gave the following description of the site. The Glashgarriff River has a notable waterfall and several series of rapids. The wooded, humic valley has regions of seepage and exposed rock. Sedges (*Carex laevigata*) and Eared Willow (*Salix aurita*) are characteristic of the woodland here while the rocks are generally covered by mosses or, in shady places filmy ferns (*Hymenophyllum* sp.). The waterfall was once a site for the legally protected Killarney fern (*Trichomanes speciosum*) in the last century but it has now disappeared.

The ground flora of the woodland is moderately rich for an upland situation. Wood Anemone (*Anemone nemorosa*), Primrose (*Primula vulgaris*), Bluebell (*Hyacinthoides non-scriptus*) and the bulbous form of Celendine (*Ranunculus ficaria*) occur.

Otters use this site, a species listed under Annex II of the E.U. Habitats Directive as it is threatened in the E.U. Badgers also occur here, this species is internationally important in the Irish Red Data Book.

The main landuse within the site is forestry. The woodlands and river are also used for amenity purposes and shooting.

This site includes one of the few waterfalls in the county. The flora of ferns and non-flowering plants in the glen are of interest. The presence of two protected mammal species adds further importance to the site.

**Site Name: Prohus Wood pNHA**

**Site Code: 001248**

Prohus Wood which is situated 7 km. west of Macroom consists predominantly of young trees, partly coppiced growing on rocky ground which slopes to the east. Birch (*Betula* sp.), Oak (*Quercus* sp.) and Holly (*Ilex aquifolium*) are frequent, with some Willows (*Salix* sp.) and Alder (*Alnus glutinosa*) beside streams. At the lower edge thickets of Blackthorn (*Prunus spinosa*) and Hawthorn (*Crateagus monogyna*) occur with some Hazel (*Corylus avellana*). The trees are quite closely spaced and in the shade only mosses grow on their trunks. Pockets of clayey soil alternate with mossy boulders and support such plants as Common Dog-violet (*Viola riviniana*), Stitchwort (*Stellaria holostea*), Bugle (*Ajuga reptans*) and Wood sanicle (*Sanicula europaea*). In wetter places Golden opposite-leaved Saxifrage (*Chrysosplenium oppositifolium*) and the moss *Mnium punctatum* are characteristic.

The main landuse within and surrounding the site is grazing by cattle.

This site is a very young wood derived from widespread clearance about forty years ago (1986). The site has not developed much habitat diversity but is developing quite naturally and is of local importance.

Source: AFF County Report (1986)

5/12/1995

**Site Name: Lough Allua pNHA**

**Site Code: 001065**



Lough Allua is an expanded section of the river Lee where it meets an obstruction of rock and glacial debris above Inchigeelagh in Co. Cork. The floor of the valley is flat-bottomed so that the lakeshore is complex with numerous bays, peninsulas and narrows. In addition, the fluctuation in water level seems unusually great so that a considerable area of surrounding land is flooded in winter.

For all its course the river runs over sandstone and blanket bog and consequently the lake water is acidic and stained brown, though fairly rich in nutrients. The marginal flora of the open lake is sparse, including Water Lobelia (*Lobelia dortmanna*), Common Reed (*Phragmites australis*) and Water Horsetail (*Equisetum fluviatile*), but it is better developed in the shelter of the bays and ponds. Here both waterlilies (*Nymphaea alba* and *Nuphar lutea*), Slender Sedge (*Carex lasiocarpa*) and Black Bog Rush (*Schoenus nigricans*) occur. On the surrounding land there is a widespread community of rushes (*Juncus effusus*, *J. acutiflorus*) and Tufted Hair-grass (*Deschampsia cespitosa*). More locally peaty ground and cutover bog occur where Purple Moor-grass (*Molinia caerulea*), Bog Myrtle (*Myrica gale*), Lesser Spearwort (*Ranunculus flammula*), Sneezewort (*Achillea ptarmica*) and the violets (*Viola canina* and *V. palustris*) are characteristic.

A feature of the eastern half of the lake basin is the presence of a number of large and small rocky outcrops. Rock also outcrops within the heath communities which are characterised by heathers (*Erica cinerea*, *Calluna vulgaris*), Stonecrop (*Sedum anglicum*), Goldenrod (*Solidago virgaurea*) and Sheepsbit (*Jasione montana*). In a few places the rare Pale Dog-violet (*Viola lactea*), which is protected under the Flora (Protection) Order, 1999, grows in this community. Reclamation has occurred right up to some of the outcrops and close to the lakeshore, but there remain certain areas where unfertilized grassland persists, generally on the peninsulas.

Acid woodland has developed in places; in the south-eastern corner of the site this habitat contains Oak (*Quercus* sp.) and Holly (*Ilex aquifolium*) with Fraochan (*Vaccinium myrtillus*), Cow-wheat (*Melampyrum pratense*), St. Patrick's Cabbage (*Saxifraga spathularis*) and Irish Spurge (*Euphorbia hyberna*). Elsewhere there are small Willow (*Salix* sp.) woods with Royal and Lady Ferns (*Osmunda regalis*, *Athyrium felix-femina*) and, locally, Guelder Rose (*Viburnum opulus*) and Gypsywort (*Lycopus europaeus*).

Areas of alluvial woodland occur to the east of Inchigeelagh. Small islands in the braided river channel support Alder (*Alnus glutinosa*), Birch (*Betula* sp.), Willow (*Salix* sp.), Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*), occasional Oak, Ivy (*Hedera helix*) and Ramsons (*Allium ursinum*). A small population of Freshwater Pearl Mussels occurs in the permanent channels between these islands.

The lakeshore supports Snipe, Sedge Warbler, Lapwing and Heron, while Great Crested Grebe, Little Grebe, Mallard and Moorhen also nest. The number of wintering waterfowl is small but up to 50 Mallard, Tufted Duck and Teal have been recorded.

The Lough Allua area has significant heritage value because of its diversity of habitats and the presence of several unusual plants, including a protected species.

16.11.1999

**Site Name: Boylegrove Wood pNHA**

**Site Code: 001854**

**Author: Ruth Gilbert**

Boylegrove Wood is a small deciduous woodland located c. 2km north of the village of Kilmichael and 6km south-west of Macroom Town, west County Cork. It is situated near a bend in the River Lee which flows along the eastern and southern edges of the site. To the south of the wood between the woodland and the river is heathland with many rock outcrops which is used for rough grazing. The rest of the surrounding land is of large agricultural fields. The wood is part of an old estate attached to Boylegrove House.

There is very little information for this site, the An Foras Forbatha report (1972) records that it is a locally important deciduous woodland of mainly Oak (*Quercus petraea*) and Birch (*Betula pubescens*). The ranger report (1993) notes that the wood is intact and infrequently grazed, mainly by cattle; there is also some dumping and littering activity occurring in the wood but it is not thought to be seriously damaging the wood. They also note a small area of clear felling in the north east of the site, where there is wet grassland with some scrub woodland of Birch with Bramble (*Rubus fruticosus*) and Foxglove (*Digitalis purpurea*) The felling is thought to have occurred some 20 years ago.

18/12/1995



## Appendix 2 – Habitats Directive Appropriate Assessment



**APPROPRIATE ASSESSMENT OF THE  
POTENTIAL FOR MACROOM  
DEVELOPMENT PLAN 2009 - 2015 TO  
NEGATIVELY IMPACT UPON THE  
CONSERVATION OBJECTIVES OF  
NATURA 2000 SITES**

**DOCUMENT CONTROL SHEET**

Client	Macroom Town Council					
Project Title	Macroom Appropriate Assessment					
Document Title	Appropriate Assessment of the Potential for Macroom Development Plan 2009 – 2015 to Negatively Impact Upon the Conservation Objectives of Natura 2000 Sites					
Document No.	MCE0545Rp001F01					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	20	0	0	0

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# 1 INTRODUCTION

The purpose of Appropriate Assessment of local authority plans is to ensure that protection of the integrity of European 'Natura 2000' sites is included as an integral part of the planning process at a local level. By carrying out an Appropriate Assessment, Macroom Town Council also ensure that in accepting and implementing the Development Plan 2009 – 2015 they are not likely to be in breach of the provisions of Articles 6(3) and 6(4) of the Habitats Directive.

The requirement for Appropriate Assessment of plans or projects originates from Article 6 (3) and (4) of *European Union (EU) Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora*, commonly known as the 'Habitats Directive', which is implemented in Ireland through the European Communities (Natural Habitats) Regulations of 1997. The wording of Article 6 (3) of the directive is as follows:

*'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'*

The wording of Article 6 (4) of the directive is as follows:

*'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.'*

In February 2008, the statutory requirement for an Appropriate Assessment of all land use plans was further emphasised by a Department of the Environment, Heritage and Local Government Circular Letter (SEA 1/08 & NPWS 1/08), which was issued to all County and City Managers, Directors of Services for Planning and Town Clerks. The Circular Letter entitled 'Appropriate Assessment of Land Use Plans' emphasises the fact that an appropriate assessment of the ecological implications of any plan or project is required, whether it is within or outside a designated site, if it may impact upon the conservation objectives of that site. In May 2008, the Environmental Protection Agency circulated this letter as part of their guidance on the process to be employed in Strategic Environmental Assessment as part of "SEA Pack Vol. II 16 05 08".

The process is in its infancy in Ireland and to date very few Appropriate Assessments of local authority plans have been completed and there are currently no formal guidelines on the procedure to be employed. Staffs from National Parks and Wildlife Service, the competent statutory authority, are however becoming increasingly familiar with the requirements of Appropriate Assessment, and this document has been produced in consultation with NPWS staff. It is our understanding that guidelines are currently being prepared by the EPA, however until these become available, this on-going liaison and consultation process ensures that our Appropriate Assessment has been carried out in a manner that is acceptable to the relevant competent authorities.



In addition to the advice available from NPWS, the EU has published a number of documents which provide guidance on the requirements of Appropriate Assessment, including, *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*, which sets out the principles of how to approach decision making during the process and this have been followed as closely as possible. There are however a number of restrictions when attempting to apply this document in an Irish context, including first and foremost, the lack of formal statutory guidelines; and also, importantly, the relative lack of published data on many of the faunal and floral elements of the environment which comprise the conservation objectives of European sites. In the context of Macroom however, and of The Gearagh in particular, this deficiency proved to be a relatively minor restriction to the process when compared to other locations in Ireland.

## 2 METHODOLOGY

The Appropriate Assessment process progresses through four stages as follows:

- Stage 1 – Screening of Macroom Development Plan ;
- Stage 2 – Appropriate Assessment of Macroom Development Plan;
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Assessment of compensatory measures.

Stages 1 and 2 relate to Article 6(3) of the Habitats Directive; and Stages 3 and 4 to Article 6(4).

A key consideration of Appropriate Assessment is that other plans and projects must be considered and that the assessment must take account of the impacts on Natura 2000 sites of these developments 'in combination' with the plan or project that is under consideration. The most significant project that is known of is the proposed realignment of the N22 Cork to Killarney road, between Macroom and Baile Bhuirne (Ballyvourney), which will bypass Macroom to the north. This project will not have any impacts on *The Gearagh* cSAC or *The Gearagh* SPA to the south of Macroom and hence there will not be any 'in combination' impacts. This is discussed in further detail in the Screening and Appropriate Assessment sections of this report (Sections 2 and 3 respectively).

### Stage 1 – Screening

The aim of Stage 1, 'Screening' is to determine whether or not Stage 2, the Appropriate Assessment is required, i.e. to determine whether or not the objectives and policies of the Macroom Development Plan are likely to negatively affect the conservation objectives on any Natura 2000 site. This is done by examining the objectives and the policies of the plan; and the conservation objectives of any Natura 2000 sites that might potentially be affected.

### Stage 2 – Appropriate Assessment

The aim of Stage 2, the 'Appropriate Assessment' proper, is to propose changes to Macroom Development Plan that will Avoid and Mitigate any negative impacts on Natura 2000 sites and thereby avoid the need to progress to Stage 3, which would effectively constitute a rejection of the plan in its current form and require the Town Council to implement Compensatory measures for impacts on Natura 2000 sites.

### Stages 3 and 4 - Assessment of Alternative Solutions and Compensatory Measures

Provided the recommendations of Stage 2 are incorporated into future drafts of Macroom Development Plan, Stages, 3 and 4, which relate to alternative solutions and Compensatory measures under Article 6(4) of the EU Habitats Directive, will not be required.

### Revisions

Any future revised drafts of Macroom Development Plan, including revisions to zoning proposals, will be reviewed in order to ascertain whether or not revisions to this Appropriate



Assessment are required. If a revised Appropriate Assessment is required, it will be prepared by RPS and issued to the Town Council. This process will continue at each revision stage of the Town Plan until published of the final version.

### 3 STAGE 1 – SCREENING

#### 3.1 INTRODUCTION TO THE SCREENING PROCESS

This stage involves establishing whether or not the plan is likely to have a significant effect on the conservation objectives of any Natura 2000 site. The screening process requires an initial review of the draft plan to identify any policies or objectives that might potentially have impacts upon Natura 2000 sites. These might include for example policies and objectives that include a requirement for new development land; policies or objectives that may result in increases in disturbance to sensitive fauna and flora; policies and objectives that could result in deterioration in water quality, etc.

For definition purposes the Natura 2000 site(s) include Special Areas of Conservation (habitats) and/ or Special Protection Areas (birds). With regard to SACs, Annex I refers to habitats and Annex II refers to species listed in the Habitats Directive. With regard to SPAs, Annex I refers to the EU Birds Directive. Also land that could have a potential to contain important bird areas that have not already been designated, as an SPA should be taken into consideration.

**Table 1: Natura 2000 Sites Within 15km of Macroom Town, Co. Cork**

Site Name	Site Designation	Site Code	Location Relative to Macroom
The Gearagh	cSAC	000108	1km to the south of the town and partially within the town boundary
The Gearagh	SPA	004109	1.5 km to the southwest of the town and within 500m of the town boundary
Mullaghanish to Musheramore Mountains	SPA	004162	3.5km to the northwest of the town boundary
St Gobnet's Wood	cSAC	000106	12km to the west
Mullaghanish Bog	cSAC	001890	12km to the northwest

Screening also requires a review of all Natura 2000 sites that could potentially be subject to the impacts that have been identified. Clearly a key variable that will determine whether or not a particular Natura 2000 site is likely to be negatively effected by the draft plan's policies and objectives is its physical distance from Macroom, and it will generally, but not necessarily, be the case that the greater the distance the lower the possibility of impacts. It is not considered that any of the policies or objectives of Macroom Development Plan 2009 – 2015 have the potential to impact upon any Natura 2000 sites more than 15km from the town. A total of five Natura 2000 sites are located within 15km of the town. These are shown in Table 1, which also gives the distance and direction of each site from Macroom. Each site is then discussed with respect to its requirement or not for an Appropriate Assessment.

Data and information for this screening assessment was collected from the following sources, consultation with NPWS, Natura 2000 Forms, 'Notice of Intention to Designate' Forms, NPWS



Site Synopses, other published data on rare and protected species, and personal knowledge of the sites.

### 3.2 MULLAGHANISH TO MUSERAMORE MOUNTAINS SPA

This SPA was designated as recently as 2007 and lies to the north of Baile Bhuirne (Ballyvourney). No Natura 2000 form is yet available for the site (July 2008) however discussions on the subject with staff from National Parks and Wildlife Service and examination of the 'Notice of Intention to Designate' form indicate that the site is designated primary for the protection of a breeding population of the Birds Directive Annex 1 bird species Hen Harrier. Merlin, another Birds Directive Annex I species is also mentioned in the 'Notice of Intention to Designate' as breeding within the SPA in small numbers.

The SPA consists of upland bog, heath, grassland and forestry habitats on which these species depend during the breeding season. Due to the nature of these habitats and their distance from Macroom town, it is not considered that any of the policies or objectives of Macroom Development Plan 2009 – 2015 could have impacts on these habitats or on these bird species, and hence could not have 'in combination' impacts either. **Appropriate Assessment of Macroom Development Plan 2009 – 2015 in relation to the potential for negative impacts on Mullaghanish to Museramore Mountains SPA is not required.**

### 3.3 ST GOBNET'S WOOD cSAC

*St. Gobnet's Wood* cSAC is a good example of a native woodland typical of the southwest of Ireland. It is designated on the basis of the Annex I habitats 'old oak woodlands' and '*residual alluvial forest*'. Only a small section of the latter is present, along the Sullane River. The cSAC is divided into two sections either side (north and south) of the town of Baile Bhuirne (Ballyvourney). The northern portion, known as Cascade Wood, was added to the cSAC in 2007. Whilst an updated Natura 2000 form for the site is not yet available (July 2008), consultation on the subject with staff from National Parks and Wildlife Service and examination of the 'Notice of Intention to Designate' indicates that primary conservation objective of the new section of the site is the protection of the Annex I habitat 'old oak woodlands'. The 'Notice of Intention to Designate' form also mentions the rich lichen and bryophyte communities of the wood, the population of the Annex II species Kerry slug and the seven bat species known from the wood, including the Annex II species lesser horseshoe bat. These species are however not listed as Qualifying Interests of the site.

Due to the relatively large distance from Macroom town; and the fact the site lies upstream of Macroom town, hence negating any possibility of hydrological or water quality impacts, it is considered very unlikely that any policies or objectives of Macroom Development Plan 2009 - 2015 could have impacts within this cSAC, and hence could not have 'in combination' impacts either. **Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on *St Gobnet's Wood* cSAC is not required.**

### 3.4 MULLAGHANISH BOG cSAC

*Mullaghanish Bog* cSAC is a small, good-quality mountain 'blanket bog', a priority habitat listed on Annex I of the EU Habitats Directive. It is remarkable for its intactness, and is one of the few such sites in the country where the vegetation has not been damaged by overgrazing or erosion.



Due to the relatively large distance from Macroom town; and the fact the site lies upstream of Macroom town, hence negating any possibility of hydrological or water quality impacts, it is considered very unlikely that any policies or objectives of Macroom Development Plan 2009 - 2015 could have impacts within this cSAC, and hence could not have 'in combination' impacts either. **Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on Mullaghanish Bog cSAC is not required.**

### 3.5 THE GEARAGH cSAC

*The Gearagh* is a unique site that has formed where the River Lee breaks into a complex network of channels (2 to 6m wide) weaving through a series of wooded islands. About half the original area was destroyed by flooding when the Inishcarra Reservoir was created during the 1950's, however *The Gearagh* still represents the only extensive alluvial woodland in Ireland or Britain, or indeed Western Europe west of the Rhine. The site supports the Priority Annex I habitat '*residual alluvial forest*' and also small areas of the Annex I habitats 'old oak woodland' and 'floating river vegetation'.

The site lies partly with Macroom Town Boundary and there are therefore potential impacts on the site as a result of Policies, Objectives, Zonings or other issues described in the Town Plan. **Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on *The Gearagh* cSAC is required.**

### 3.6 THE GEARAGH SPA

The Gearagh, which lies to the south of Macroom, supports an important wintering bird population, including populations of the Birds Directive Annex I species Golden Plover and Whooper Swan.

The main habitat at the site for these species is a large shallow lake with muddy fringes that are of variable extent, depending upon water levels in Carrigadrohid Reservoir, of which the lake is a part.

The site lies less than 500m from Macroom Town Boundary, and a large part of the lake outside the boundary of the SPA (but within *The Gearagh* cSAC, see Section 3.5) lies within the town boundary. There are therefore potential impacts on the lake and therefore the conservation objectives of the site, as a result of Policies, Objectives, Zonings or other issues described in the Town Plan. **Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on *The Gearagh* SPA is required.**



## 4 STAGE 2 – APPROPRIATE ASSESSMENT

### 4.1 INTRODUCTION TO THE APPROPRIATE ASSESSMENT

The Screening Stage (Stage 1) has concluded that Appropriate Assessment (Stage 2) of Macroom Development Plan 2009 - 2015 is required to identify policies, objectives and proposals (i.e. critical infrastructure) of the plan that might potentially impact negatively, including potential 'in combination' impacts, on the conservation objectives of the following Natura 2000 Sites:

- **The Gearagh cSAC; and**
- **The Gearagh SPA.**

The negative impacts that have been identified, which are discussed in this section, require the implementation of 'Avoidance' or 'Mitigation' measures, which will require amendments to Macroom Development Plan 2009 - 2015 in order to avoid the need to progress to Stages 3 and 4 of the Appropriate Assessment process; the assessment of alternative solutions and compensatory measures.

### 4.2 THE GEARAGH cSAC

Documentation that has been referred to includes, the Natura 2000 Form and Site Synopsis for the site. Consultation with NPWS was also undertaken in this regard, in the form of discussions between Rick Mundy and Jervis Good, NPWS Regional Ecologist.

#### 4.2.1 Summary of the Key Features of the Site and of the Environmental Conditions which Support Them

This section provides details of the Annex I habitats and the Annex II species for which this cSAC has been designated; and of the environmental factors which support these features (the conservation objectives of the site).

##### 4.2.1.1 Annex I Habitats

The Gearagh represents the only extensive alluvial woodland in Ireland or Britain, or indeed Western Europe west of the Rhine. For this reason it is a unique site and has also been designated as a Statutory Nature Reserve (see below). The international importance of the site is recognised by its designation both as a Ramsar Site and as a Biogenetic Reserve in addition to its status as a cSAC. The site supports the Priority Annex I habitat '*residual alluvial forest*' and also small areas of the Annex I habitats 'old oak woodland' and 'floating river vegetation'.

##### 4.2.1.2 Annex II Species

The Natura 2000 Form mentions the Annex II mammal species otter and a number of bird species including the Birds Directive Annex I species Golden Plover and Whooper Swan (see Section 3.6). The Natura 2000 form also mentions a number of other scarce species of flora



and fauna that are present at the site, including the Flora (Protection) Order (1999) plant species Mudwort.

#### **4.2.1.3 Environmental Factors that might be affected by the plan**

Whilst the Natura 2000 Form states that there are no major threats to the site, the potential for eutrophication, the potential for illegal removal of timber and potential damage from grazing / poaching by cattle and the possibility of drainage attempts are mentioned. The following broad environmental categories constitute conservation objectives of the site that could potentially be negatively impacted upon by the town plan.

##### *Available land area*

All habitats and species require sufficient land area to maintain a healthy conservation status.

##### *Disturbance*

All ecosystems and their habitats and species are to some extent sensitive to human disturbance, and an absence of excessive disturbance constitutes a key environmental factor for all of the species and habitats discussed above.

##### *Water quality*

The Gearagh is an aquatic system, and many of scarce flora and sensitive faunal species that it supports are liable to negative impacts if water quality in the system deteriorates. Whilst the main habitat for which the Gearagh is designated, 'Residual alluvial forest', is probably not especially sensitive to minor deteriorations in water quality, the site supports a number of scarce flora species which may be, and the high water quality currently experienced by the site is probably of importance to food chains that support otters, and also other bird and mammal populations, at the site. It is important that no significant inputs of sediments, nutrients or toxins enter the watercourses of the catchments of the Rivers Lee and Toon upstream of the site.

##### *The Hydrological Regime*

The Gearagh is an aquatic system, which has evolved as a consequence of the specific hydrological conditions that exist in the area. Whilst the natural system has been greatly disrupted in the past by the creation of the Lee Valley reservoirs, which flooded and destroyed much of the original area of The Gearagh, the maintenance of natural patterns of hydrological input into the system, via the Rivers Lee and the River Toon, and probably to some extent also by groundwater, is vital to the conservation of the remainder of the area. 'Residual alluvial forest' in particular, is dependent upon the maintenance of the natural hydrological regime.

#### **4.2.2 Summary of Policies and Objectives of the Macroom Development Plan 2009 - 2015 that may impact upon the Conservation Objectives of the site.**

It is considered unlikely that any of the Policies or Objectives of Macroom Development Plan 2009 – 2015 could result in negative impacts on The Gearagh cSAC, however two issues do have some small potential to affect the site.



### *Building Development*

Whilst Policy NEP8 and Objective NE2 of Macroom Development Plan 2009 – 2015 acknowledge the importance of The Gearagh, and emphasise the requirement for restrictions on development in the vicinity of the site, no specific restrictive zoning or ban on developments in the area is proposed in the plan. Whilst limited, small scale, appropriately designed development is unlikely to result in any negative impact on the conservation objectives of the site, any such planning application should be subject to an Appropriate Assessment under the provisions of the Habitats Directive and hence Policy NEP8 and Objective NE2 should be amended in this regard (see Section 5.1.2).

### *Hydrological Impacts*

The importance of maintaining a natural hydrological regime in The Gearagh has been highlighted in Section 4.2.1.3 of this report, and this should be viewed as a key conservation objective of the site. Policy WSP4 discusses the need to investigate the possibility of located new water resources for Macroom town and it is important that any future water abstraction programme, either groundwater or surface water, does not alter the hydrological regime on which The Gearagh depends. Policy WSP4 should therefore be amended in this regard (see Section 5.2.1)

### **4.2.3 Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on *The Gearagh* cSAC**

Table 4.1 brings together in tabular form the details described in Section 4.2.1 and 4.2.2. The matrix identifies the key features for which the cSAC is designated; the environmental factors on which those features depend; the elements of the plan that may result in negative impacts on those environmental factors; the avoidance and mitigation measures required and the actions required to implement these measures, namely additional Policies and amendments to existing Policies and Objectives of the plan, and changes to zonings.

**Table 4.1: Potential Impacts on the Conservation Features of The Gearagh cSAC Resulting From the Policies and Objectives of Macroom Development Plan**

Qualifying Features (Conservation Objectives)	Conditions that support the qualifying feature (conservation objectives) which might be potentially affected by the town plan	Possible Impacts of Macroom Development Plan	Possible 'in combination' Impacts From Other Plans and Projects	Avoidance and Mitigation Measures Required	Actions Required
Priority Annex I habitat: 'remnant alluvial forest'	<ul style="list-style-type: none"> <li><input type="checkbox"/> Lack of serious human disturbance, (fires, vandalism, timber removal, etc.).</li> <li><input type="checkbox"/> Unaltered, natural hydrological system with natural sedimentation patterns.</li> <li><input type="checkbox"/> Good water quality.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Changes to hydrological regime and sedimentation patterns.</li> <li><input type="checkbox"/> Reduction in water quality as a result of increased inputs from manmade sources.</li> <li><input type="checkbox"/> Increased disturbance and damage due to increased local population and increased access.</li> </ul>	None known	<ul style="list-style-type: none"> <li><input type="checkbox"/> Appropriate Assessment of any water abstraction proposals within the catchments of the Lee or the Toon.</li> <li><input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Policy requires an amendment.</li> <li><input type="checkbox"/> Policy NEP8 and Objective NE2 require amendments.</li> </ul>



**Table 4.1: Potential Impacts on the Conservation Features of The Gearagh cSAC Resulting From the Policies and Objectives of Macroom Development Plan 2009 - 2015 (continued)**

Qualifying Features (Conservation Objectives)	Conditions that support the qualifying feature (conservation objectives) which might be potentially affected by the town plan	Possible Impacts of Macroom Development Plan	Possible 'in combination' Impacts From Other Plans and Projects	Avoidance and Mitigation Measures Required	Actions Required
Annex I habitat: 'old oak woodland'	Lack of serious human disturbance, (fires, vandalism, timber removal, etc.).	<input type="checkbox"/> Increased disturbance and damage due to increased population and increased access.	None known	<input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.	<input type="checkbox"/> Policy NEP8 and NE2 Objective require amendments.

Table 4.1: Potential Impacts on the Conservation Features of The Gearagh cSAC Resulting From the Policies and Objectives of Macroom Development Plan 2009 - 2015 (continued)

Qualifying Features (Conservation Objectives)	Conditions that support the qualifying feature (conservation objectives) which might be potentially affected by the town plan	Possible Impacts of Macroom Development Plan	Possible 'in combination' Impacts From Other Plans and Projects	Avoidance and Mitigation Measures Required	Actions Required
Annex 1 habitat: 'floating vegetation' river	<input type="checkbox"/> Unaltered, natural hydrological system. <input type="checkbox"/> Good water quality.	<input type="checkbox"/> Changes to hydrological regime. <input type="checkbox"/> Reduction in water quality as a result of increased inputs from manmade sources.	None known	<input type="checkbox"/> Appropriate Assessment of any water abstraction proposals within the catchments of the Lee or the Toon. <input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.	<input type="checkbox"/> Policy WSP4 requires an amendment. <input type="checkbox"/> Policy NEP8 and Objective NE2 require amendments.



**Table 4.1: Potential Impacts on the Conservation Features of The Gearagh cSAC Resulting From the Policies and Objectives of Macroom Development Plan 2009 - 2015 (continued)**

Qualifying Features (Conservation Objectives)	Conditions that support the qualifying feature (conservation objectives) which might be potentially affected by the town plan	Possible Impacts of Macroom Development Plan	Possible 'in combination' Impacts From Other Plans and Projects	Avoidance and Mitigation Measures Required	Actions Required
Annex II mammal species: otter, which is likely to occur on all watercourses and water bodies in the area.	<input type="checkbox"/> Healthy populations (for fish food). <input type="checkbox"/> Suitable, undisturbed riverbanks and other areas.	<input type="checkbox"/> Increased disturbance and damage to riverbanks due to increased local population and increased access. <input type="checkbox"/> Changes to hydrological regime. <input type="checkbox"/> Reduction in water quality as a result if increased inputs from manmade sources.	None known	<input type="checkbox"/> Appropriate Assessment of any water abstraction proposals within the catchments of the Lee or the Toon. <input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.	<input type="checkbox"/> Policy WSP4 requires an amendment. <input type="checkbox"/> Policy NEP8 and Objective NE2 require amendments.





### **4.3 THE GEARAGH SPA**

Documentation that has been referred to includes, the Natura 2000 Form and Site Synopsis for the site. Consultation with NPWS was also undertaken in this regard, in the form of discussions between Rick Mundy and Jervis Good, NPWS Regional Ecologist.

#### **4.3.1 Summary of the Key Features of the Site and of the Environmental Conditions which Support Them**

This section provides details of the Birds Directive Annex I species for which this SPA has been designated; and of the environmental factors which support these features (the conservation objectives of the site).

##### **4.3.1.1 Birds Directive Annex I Species**

The Gearagh supports important wintering bird populations, including populations of the Birds Directive Annex I species Golden Plover and Whooper Swan.

##### **4.3.1.2 Other Important Bird Populations**

The Natura 2000 form indicates that six bird species occur in nationally important numbers: Golden Plover, Mute Swan, Teal, Wigeon, Shoveler and Coot. Also present during the winter are significant populations of Tufted Duck, Pochard, Mallard, Gadwall, Pintail, Goldeneye, Grey Heron, Cormorant, Lapwing and Curlew. Small numbers of Great Crested Grebe and Tufted Duck breed and there is a feral flock of about 50 Greylag Geese.

##### **4.3.1.3 Environmental Factors that might be affected by the plan**

The main habitat at the site for these species is a large shallow lake with muddy fringes that are of variable extent, depending upon water levels in Carrigadrohid Reservoir, of which the lake is a part. The Natura 2000 Form for the site states that there are no imminent threats to the wintering bird populations at the site, but that some disturbance is caused by illegal shooting. The following section details potential negative impacts of the plan on the conservation objectives of the site.

##### *Available land area*

All habitats and the bird species which depend on them require sufficient land area to maintain a healthy conservation status.

##### *Disturbance*

All ecosystems and their habitats and species are to some extent sensitive to human disturbance, and an absence of excessive disturbance constitutes a key environmental factor for all of the species and habitats discussed above. This applies in particular to birds, which are generally highly vulnerable to disturbance impacts.



### *Water quality*

The Gearagh is an aquatic system, and some of the wetland habitats present at the site, which support the important bird populations, are sensitive to deterioration in water quality. It is important that no significant inputs of sediments, nutrients or toxins enter the watercourses of the catchments of the Rivers Lee and Toon upstream of the site.

### *The Hydrological Regime*

The Gearagh is an aquatic system, which has evolved as a consequence of the specific hydrological conditions that exist in the area. Whilst the natural system has been greatly disrupted in the past by the creation of the Lee Valley reservoirs, which flooded and destroyed much of the original area of The Gearagh, the maintenance of natural patterns of hydrological input into the system, via the Rivers Lee and Toon, and probably to some extent also by groundwater, is important for the maintenance of the range of wetland conditions which attract birds to the site.

#### **4.3.2 Summary of Policies and Objectives of Macroom Development Plan 2009 - 2015 that may impact upon the Conservation Objectives of the site**

It is considered unlikely that any of the Policies or Objectives of Macroom Development Plan 2009 – 2015 will result in negative impacts on The Gearagh cSAC, however two issues do have some small potential to affect the site.

### *Building Development*

Whilst Policy NEP8 and Objective NE2 of Macroom Development Plan 2009 – 2015 acknowledge the importance of The Gearagh, and emphasise the requirement for restrictions on development in the vicinity of the site, no specific restrictive zoning or ban on developments in the area is proposed in the plan. Whilst limited, small scale, appropriately designed development is unlikely to result in any negative impact on the conservation objectives of the site, any such planning application should be subject to an Appropriate Assessment under the provisions of the Habitats Directive and hence Policy NEP8 and Objective NE2 should be amended in this regard (see Section 5.1.2).

### *Hydrological Impacts*

The importance of maintaining a natural hydrological regime in The Gearagh has been highlighted in Section 4.2.1.3 of this report, and this should be viewed as a key conservation objective of the site. Policy WSP4 discusses the need to investigate the possibility of located new water resources for Macroom town and it is important that any future water abstraction programme, either groundwater or surface water, does not alter the hydrological regime on which The Gearagh depends. Policy WSP4 should therefore be amended in this regard (see Section 5.2.1)

#### **4.3.3 Appropriate Assessment of Macroom Development Plan 2009 - 2015 in relation to the potential for negative impacts on The Gearagh SPA**

Table 4.2 brings together in tabular form the details described in Section 4.3.1 and 4.3.2. The matrix identifies the key bird populations for which the SPA is designated; the environmental factors on which they depend; the elements of the plan that may result in negative impacts on them; the avoidance and mitigation measures required and the actions required to implement these measures, namely additional policies and amendments to existing Policies and Objectives of the plan, and changes to zonings.



**Table 4.2: Potential Impacts on the Conservation Features of The Gearagh SPA Resulting From the Policies and Objectives of Macrooom Development Town Plan**

Qualifying Features (Conservation Objectives)	Conditions that support the qualifying feature (conservation objectives) which might be potentially affected by the town plan	Possible Macrooom Impacts of Development	Possible combination of Impacts From Other Plans and Projects	Avoidance and Mitigation Measures Required	Actions Required
Birds Directive Annex I species Whooper Swan	<input type="checkbox"/> Sufficient area of undisturbed habitat, primarily wet grassland and open water.	<input type="checkbox"/> Increased disturbance due to increased local population and increased access. <input type="checkbox"/> Changes to hydrological regime. <input type="checkbox"/> Reduction in water quality as a result of increased inputs from manmade sources.	None known	<input type="checkbox"/> Appropriate Assessment of any water abstraction proposals within the catchments of the Lee or the Toon. <input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.	<input type="checkbox"/> Policy WSP4 requires an amendment. <input type="checkbox"/> Policy NEP8 and Objective NE2 require amendments.
Birds Directive Annex I species Golden Plover	<input type="checkbox"/> Sufficient area of undisturbed habitat, primarily wet grassland and exposed mud.	<input type="checkbox"/> Increased disturbance due to increased local population and increased access. <input type="checkbox"/> Changes to hydrological regime. <input type="checkbox"/> Reduction in water quality as a result of increased inputs from manmade sources.	None known	<input type="checkbox"/> Appropriate Assessment of any water abstraction proposals within the catchments of the Lee or the Toon. <input type="checkbox"/> Appropriate Assessment of any planning proposal within the catchments of the Lee or the Toon.	<input type="checkbox"/> Policy WSP4 requires an amendment. <input type="checkbox"/> Policy NEP8 and Objective NE2 require amendments.



## 5 REQUIRED ACTIONS

As a result of the Appropriate Assessment, the following changes should be made to the Policies and Objectives of Macroom Development Plan 2009 – 2015, in order to mitigate and avoid potential negative impacts on the conservation objectives of, *The Gearagh* cSAC or *The Gearagh* SPA.

### 5.1 CHAPTER 2.7 NATURAL ENVIRONMENT

#### 5.1.1 Suggested Additional Section

It is suggested that the following additional text is added to the plan immediately following "Section 2.7.5 Strategic Environmental Assessment":

"Appropriate Assessment of the potential for this Development Plan to impact negatively on Natura 2000 European sites, as required under Article 6(3) of the EU Habitats Directive, has been carried out by ecologists from RPS Group in consultation with staff from National Parks and Wildlife Service."

#### 5.1.2 Amendments to Policies and Objectives

The following Policies and Objectives should be amended:

Policy NEP8: "*Require any future planning applications for development in the vicinity of the Gearagh to include a report on the likely potential impacts and any necessary mitigation impacts. This report should be carried out by a professional ecologist or suitably qualified professional.*" should be amended to:

"Require any future planning applications for development in the vicinity of *The Gearagh* SPA or *The Gearagh* cSAC, including any planning application for development within the catchments of the River Lee upstream of *The Gearagh* or the Toon River to be subject to Appropriate Assessment of any potential to impact negatively on *The Gearagh* cSAC / SPA, as required under Article 6 of the EU Habitats Directive."

Objective NE2: "*Protect the environmental quality and diversity of the Gearagh and its landscape setting. Development within the vicinity of this site of international importance will be restricted, in particular housing and ancillary facilities such as septic tanks, and any other developments with the potential to impact visually or physically on the Gearagh.*" should be amended to:

"Protect the environmental quality and diversity of the Gearagh and its landscape setting. Development within the vicinity of this site of international importance will be restricted, in particular housing and ancillary facilities such as septic tanks, and any other developments with the potential to impact visually or physically on the Gearagh. Any planning application for development within the catchments of the River Lee upstream of *The Gearagh* or the Toon River will be subject to Appropriate Assessment of any potential to impact negatively on *The Gearagh* cSAC / SPA, as required under Article 6 of the EU Habitats Directive."



## 5.2 CHAPTER 2.12 INFRASTRUCTURE, ENGINEERING AND UTILITIES

### 5.2.1 Amendments to Policies and Objectives

Policy WSP4: "*Identify potential new sources of potable water to service the needs of the town these may include new groundwater sources or surface water abstraction.*" should be amended to:

"Identify potential new sources of potable water to service the needs of the town these may include new groundwater sources or surface water abstraction. Any potential sites for abstraction of either groundwater or surface water that are located within the catchments of the River Lee or the Toon River will be subject to Appropriate Assessment of any potential to impact negatively on *The Gearagh* cSAC / SPA, as required under Article 6 of the EU Habitats Directive."

## 5.3 CHAPTER 3.6 ENVIRONMENTAL ISSUES

### 5.3.1 Suggested Additional Section

It is suggested that the following additional text is added to the plan immediately following "Section 3.6.1 Environmental Impact Assessment":

"In addition, it is a requirement of Article 6(3) of the EU Habitats Directive that any plan or project likely to have a significant effect, either individually or in combination with other plans or projects, on an EU Natura 2000 site shall be subject to Appropriate Assessment of its potential to impact upon the site's conservation objectives. Such an Appropriate Assessment will be required for any project that has the potential to impact upon the conservation objectives of *The Gearagh* cSAC / SPA. If it is suspected by the Town Council that a project may require Appropriate Assessment, then staff from National Parks and Wildlife Service will be consulted in this regard."

