

Draft Portumna Local Area Plan 2016-2022 Strategic Environmental Assessment Environmental Report



Forward Planning
Galway County Council
July 2015



TABLE OF CONTENTS

SECTION 1	INTRODUCTION	6
1.1	INTRODUCTION AND TERMS OF REFERENCE	6
1.2	STRATEGIC ENVIRONMENTAL ASSESSMENT	6
1.3	APPROPRIATE ASSESSMENT	7
1.4	STRATEGIC FLOOD RISK ASSESSMENT	7
1.5	LEGISLATIVE CONTEXT-EU DIRECTIVE ON SEA (DIRECTIVE 2001/42/EC)	7
SECTION 2	SEA METHODOLOGY	10
2.1	INTRODUCTION	10
2.2	SCREENING	11
2.3	SCOPING	11
2.4	ENVIRONMENTAL REPORT	17
2.5	ENVIRONMENTAL BASELINE DATA AND OTHER STRATEGIC ACTIONS	18
2.6	ALTERNATIVES	18
2.7	SEA STATEMENT	19
2.8	LEGISLATIVE CONFORMANCE	19
2.9	DIFFICULTIES ENCOUNTERED	19
2.10	SEA DIFFICULTIES AND DATA GAPS	19
SECTION 3	ENVIRONMENTAL BASELINE	20
3.1	INTRODUCTION	20
3.2	GEOGRAPHICAL LOCATION AND PHYSICAL CHARACTERISTICS OF PORTUMNA	20
3.3	RELATIONSHIP OF THE PLAN AREA WITH THE GALWAY COUNTY DEVELOPMENT PLAN 2015-2021	20
3.4	BIODIVERSITY, FLORA AND FAUNA	20
3.4.1	<i>Woodlands</i>	21
3.4.2	<i>CORINE Land Cover Mapping</i>	21
3.4.3	<i>Ecological Networks</i>	23
3.4.4	<i>Invasive Alien Species</i>	23
3.4.5	<i>Designations & Natural Heritage Areas</i>	23
3.4.5.1	<i>Special Protection Areas</i>	23
3.4.5.2	SPECIAL AREAS OF CONSERVATION	25
3.4.5.3	NATURAL HERITAGE AREAS	27
3.4.6	<i>Register of Protected Areas</i>	29
3.4.7	<i>Existing Environmental Problems</i>	29
3.4.8	<i>Evolution of Biodiversity, Flora and Fauna in the absence of a Local Area Plan</i>	29
3.4.9	<i>Inter-relationship with Other Environmental Parameters</i>	29
3.5	POPULATION AND HUMAN HEALTH	30
3.5.1	<i>Population context</i>	30
3.5.2	<i>Age Profile</i>	30
3.5.3	<i>Education Profile</i>	31
3.5.4	<i>Travel Patterns</i>	32
3.5.5	<i>Housing Composition</i>	33
3.5.6	<i>Employment and Economy</i>	34
3.5.7	<i>Human Health and Quality of Life</i>	35
3.5.8	<i>Existing Problems</i>	36
3.5.9	<i>Evolution of Population and Human Health in the absence of a Local Area Plan</i>	36
3.5.10	<i>Inter-relationship with Other Environmental Parameters</i>	36
3.6	SOIL AND GEOLOGY	36
3.6.1	<i>Soil Types</i>	36
3.6.2	<i>Geology and Sites of Geological Interest</i>	37

3.6.3	Existing Problems.....	38
3.6.4	Evolution of Soil and Geology in the absence of a Local Area Plan.....	38
3.6.5	Inter-relationships with Other Environmental Parameters.....	38
3.7	WATER.....	38
3.7.1	Potential Pressures on Water Quality.....	38
3.7.2	The Water Framework Directive (WFD).....	38
3.7.3	Rivers.....	39
3.7.4	Ground Waters.....	42
3.7.4.1	Groundwater Vulnerability.....	44
3.7.4.2	Groundwater Productivity.....	44
3.7.5	Flooding.....	45
3.7.6	Existing Problems.....	46
3.7.7	Evolution of Water in the absence of a Local Area Plan.....	47
3.7.8	Inter-relationships with Other Environmental Parameters.....	47
3.8	AIR AND CLIMATIC FACTORS.....	47
3.8.1	Ambient Air Quality.....	47
3.8.2	Air Zones.....	47
3.8.3	Radon Gas.....	48
3.8.4	Noise.....	48
3.8.5	Climatic Factors.....	49
3.8.5.1	Greenhouse Gases.....	49
3.8.5.2	Climate Change.....	49
3.8.5.3	Existing Problems.....	49
3.8.6	Evolution of Air and Climatic Factors in the absence of a Local Area Plan.....	49
3.8.7	Inter-relationships with Other Environmental Parameters.....	49
3.9	MATERIAL ASSETS.....	50
3.9.1	Categories of Material Assets.....	50
3.9.2	Waste Water Treatment Infrastructure.....	50
3.9.3	Sludge Management Plan.....	52
3.9.4	Surface Water Drainage.....	52
3.9.5	Drinking Water Supply, Capacity and Demand.....	52
3.9.6	Drinking Water Quality.....	53
3.9.7	Waste Management.....	53
3.9.8	Transport.....	53
3.9.8.1	Vehicular Circulation.....	53
3.9.9	Energy/Renewable Energy and Telecommunications Infrastructure.....	54
3.9.10	Licensed Facilities.....	54
3.9.10.1	IPPC Licensed Facilities.....	54
3.9.10.2	Waste Licensed Facilities.....	54
3.9.11	Existing Problems.....	54
3.9.12	Evolution of Material Assets in the absence of a Local Area Plan.....	54
3.9.13	Inter-relationships with Other Environmental Parameters.....	55
3.10	CULTURAL HERITAGE.....	55
3.10.1	Archaeological Heritage.....	55
3.10.2	Record of Monuments and Places.....	55
3.10.3	Architectural Heritage.....	56
3.10.4	Record of Protected Structures.....	56
3.10.5	Architectural Conservation Areas.....	57
3.10.6	Existing Problems.....	58
3.10.7	Evolution of Cultural Heritage in the absence of a Local Area Plan.....	58
3.10.8	Inter-relationships with other Environmental Parameters.....	59
3.11	LANDSCAPE.....	59
3.11.1	Landscape Character Assessment.....	59

3.11.2	<i>Landscape Character Areas</i>	59
3.11.3	<i>Landscape Values</i>	60
3.11.4	<i>Landscape Sensitivity Classes</i>	61
3.11.5	<i>Focal Points and Views</i>	63
3.11.6	<i>Existing Problems</i>	63
3.11.7	<i>Evolution of Landscape in the absence of a Local Area Plan</i>	63
3.11.8	<i>Inter-relationships with Other Environmental Parameters</i>	63
3.12	OVERLAY OF ENVIRONMENTAL SENSITIVITIES OF THE PLAN AREA	64
SECTION 4	REVIEW OF RELEVANT POLICIES, PLANS AND PROGRAMMES	66
4.1	INTRODUCTION	66
4.2	THE KEY RELEVANT PLANNING POLICIES	66
4.2.1	<i>Planning and Development Policies</i>	66
4.2.2	<i>Environmental Plans and Policies</i>	67
SECTION 5	DRAFT PORTUMNA LOCAL AREA PLAN 2016-2022	72
5.1	INTRODUCTION	72
5.2	DRAFT PORTUMNA LOCAL AREA PLAN 2016-2022-CONTEXT.....	72
5.3	PROFILE OF PORTUMNA.....	72
5.4	STRUCTURE AND CONTENT.....	73
5.5	STRATEGIC VISION	73
SECTION 6	ENVIRONMENTAL ASSESSMENT AND STRATEGIC ENVIRONMENTAL OBJECTIVES	75
6.1	INTRODUCTION	75
6.2	DEVELOPMENT OF STRATEGIC ENVIRONMENTAL OBJECTIVES	75
6.3	APPLICATION OF STRATEGIC ENVIRONMENTAL OBJECTIVES.....	79
SECTION 7	DEVELOPMENT AND CONSIDERATION OF ALTERNATIVES	80
7.1	INTRODUCTION	80
7.2	LEGISLATIVE CONTEXT	80
7.3	IDENTIFICATION AND DESCRIPTION OF ALTERNATIVE PLAN SCENARIOS.....	81
7.3.1	<i>Introduction</i>	81
7.4	ALTERNATIVES CONSIDERED FOR SEA	81
7.4.1	<i>Development Option 1 –Concentrated Development to the North-West of Plan Area</i>	82
7.4.2	<i>Development Option 2 –Urban Sprawl on the Arterial Routes of the Plan Area-</i>	83
7.4.3	<i>Development Option 3 – Consolidate Town Expansion & Promote Sequential Development with a Refined Boundary</i>	84
7.5	<i>Evaluation of SEA Alternatives</i>	85
7.6	SEA PREFERRED ALTERNATIVE	86
7.7	THE PREFERRED ALTERNATIVE	86
SECTION 8	ASSESSMENT OF EFFECTS OF IMPLEMENTING THE PORTUMNA LOCAL AREA PLAN 2016-2022.....	88
8.1	INTRODUCTION	88
8.2	ENVIRONMENTAL ISSUES	88
8.3	OVERVIEW OF EVALUATION OF POLICIES AND OBJECTIVES	88
8.3.1	<i>Development Strategy</i>	88
8.3.2	<i>Residential Development</i>	89
8.3.3	<i>Social and Community Development</i>	89
8.3.4	<i>Economic Development</i>	89
8.3.5	<i>Tourism</i>	90
8.3.6	<i>Transport Infrastructure</i>	90
8.3.7	<i>Utilities Infrastructure, Climate Change & Environmental Management</i>	90
8.3.8	<i>Telecommunications, Energy Infrastructure & Renewable Energy</i>	91

8.3.9	<i>Urban Design and Landscape</i>	91
8.3.10	<i>Built and Cultural Heritage</i>	91
8.3.11	<i>Natural Heritage and Biodiversity</i>	91
8.3.12	<i>Overview of Evaluation of Land Use Zoning Objectives</i>	92
8.4	CUMULATIVE/IN-COMBINATION EFFECTS.....	97
8.4.1	<i>Legislation</i>	97
8.4.2	<i>Assessment against Other Plans and Programmes</i>	97
8.4.3	<i>Assessment of Cumulative Effects of Portumna Local Area Plan 2016-2022</i>	100
SECTION 9	MITIGATION MEASURES	101
9.1	INTRODUCTION	101
SECTION 10	MONITORING	105
10.1	REQUIREMENT FOR MONITORING.....	105
10.2	RESPONSIBILITIES AND FREQUENCY OF REPORTING.....	105
10.3	CONCLUSION	109

LIST OF FIGURES & TABLES

Figure 1.2	Portumna Draft Local Area Plan 2016-2022. (Source GCC).	9
Figure 3.1	Corine Land Cover 2012.(Source GCC).....	22
Figure 3.2	Corine Land Cover 2006. (Source GCC).....	22
Figure 3.3	Designated Sites & National Heritage Areas within and surrounding the Plan Area. (Source GCC).....	28
Figure 3.4	Designated Sites & Natural Heritage Areas within 15km of Plan Area. (Source GCC).....	28
Figure 3.5	Portumna Age Profile 2006-2011.....	31
Figure 3.6	Education Profile	32
Figure 3.7	Population aged 5 years and over by means of travel to work, school or college	33
Figure 3.8	Population aged 5 years and over by journey time to work, school or college.....	33
Figure 3.9	Housing Composition	34
Figure 3.10	Population aged 15 years and over by principal economic status and sex	34
Figure 3.11	Persons at work by industry and sex (males)	35
Figure 3.12	Persons at work by industry and sex (Females).....	35
Figure 3.13	Soil Types (Source GCC)	37
Figure 3.14	Geology. (Source GCC).....	37
Figure 3.15	WFD Register of Protected Areas. (Source GCC).	39
Figure 3.16	Rivers within plan area. (Source GCC).	40
Figure 3.17	Water Quality of Rivers (Q Values). (Source EPA, SRBD, GCC).	41
Figure 3.18	Risk Assessments of Rivers. (Source WFD).	42
Figure 3.19	Groundwater Bodies in the plan area. (Source EPA).	43
Figure 3.20	Risk Assessment of Groundwater. (Source EPA, GCC).....	43
Figure 3.21	GSI Groundwater Vulnerability. (Source GSI website).....	44
Figure 3.22	Groundwater Productivity. (Source EPA, GCC and GSI).....	45
Figure 3.23	Flood Risk Assessments (Source GCC).	46
Figure 3.24	Air Zone with the plan area. (Source EPA).....	48
Figure 3.25	Public Wastewater Treatment Plant and Outfall. (Source GCC).....	51
Figure 3.26	Public Wastewater treatment plant and European Sites within 15Km (Source GCC).	51
Figure 3.27	The Drinking Water Network within the plan area. (Source GCC).....	53
Figure 3.28	Location of EPA Licensed Facilities. (Source: GCC & WFD)	54
Figure 3.29	Entries to the Record of Monuments and Places. (Source: GCC & DAHG Archaeological Constraints Map: www.archaeology.ie).	56
Figure 3.30	Current Entries to the Record of Protected Structures. (Source: GCC)	57
Figure 3.31	Architectural Conservation Areas (ACA). (Source GCC)	58
Figure 3.32	Landscape Character Area. (Source Landscape Character Assessment 2003, GCC).....	60

Figure 3.33	Landscape Values. (Source Landscape Character Assessment 2003. (Source GCC)	61
Figure 3.34	Landscape Sensitivities and Visually Sensitive Ridges. (Source: GCC)	62
Figure 3.35	Views (Source: GCC).....	63
Figure 3.36	Overlay of Environmental Sensitivities (Source GCC)	65
Figure 7.1	Development Option 1— Concentrated Development to the North- West of Plan Area.....	83
Figure 7.2	Development Option 2- Urban Sprawl on the Arterial Routes of the Plan Area	84
Figure 7.3	Development Option 3- Consolidate Town Expansion & Promote Sequential Development with a Refined Boundary	85
Figure 7.4	Preferred Development Option	87
Figure 8.1	Draft Portumna Local Area Plan Land Use Zoning	95
Figure 8.2	Comparison of Land Use Zoning Map 2005-2011 & Draft Portumna Local Area Plan 2016-2022 Land Use Zoning Map.	96
Table 2.1	Portumna Local Area Plan and SEA Stages	11
Table 2.2	Scoping Submissions received from Statutory Consultees	17
Table 2.3	Structure of Environmental Report	18
Table 3.1	Population Trend for Portumna for Census Periods 2002 – 2011	30
Table 3.2	Population aged 5 years and over by means of travel to work, school or college	32
Table 6.1	Strategic Environmental Objectives.....	78
Table 7.1	Development Alternative No.1	82
Table 7.2	Development Alternative No.2	84
Table 7.3	Development Alternative No.3	85
Table 7.4	Alternatives Option Scores against SEOs	86
Table 8.1	In –combination Effects with Other Plans and Programmes.....	99
Table 9.1	Mitigation Measures Proposed as a Result of Assessment of Policies and Objectives	101
Table 10.1	Monitoring and Reporting Programme	108

Section 1 Introduction

1.1 Introduction and Terms of Reference

This document is the Environmental Report detailing the Strategic Environmental Assessment (SEA) undertaken for the *Draft Portumna Local Area Plan 2016-2022*. The purpose of this Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of development and growth within the plan area.

The SEA is being carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management in the plan area. This report should be read in conjunction with the *Draft Portumna Local Area Plan* and the Appropriate Assessment report carried out on Portumna.

1.2 Strategic Environmental Assessment

SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan/programme before a decision is made to adopt the plan/programme, the procedures for which are set out in the *Planning and Development (SEA) Regulations 2004 (as amended by SI 201 in 2011)*. The objective of the SEA process is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of specified plans and programmes with a view to promoting sustainable development. The overall 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 and to be kept informed during the decision-making process. The SEA is also an iterative process that shall inform and influence the preparation of the plan.

The structure of this Environmental Report which is the result of the Strategic Environmental Assessment is in accordance with Article 1 of the Directive which provides a broad basis for the content of the Environmental Report. This Report therefore identifies, describes and evaluates the likely significant effects on the environment of implementing the plans policies and objectives. In accordance with the Directive, this Environment Report provides the following:

- An outline of the content and main objectives of the *Portumna Local Area Plan 2016-2022* and the relationship between these and other relevant plans and programmes;
- The environmental characteristics of the area affected by the plan;
- Any existing environmental problems which are relevant to the plan, including, in particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC (Directive for the Conservation of Wild Birds) and 92/43/EEC (Conservation of Natural Habitats and of Wild Fauna and Flora);
- The environmental protection objectives, established at International, Community or Member State level, which are relevant to the plan and the way these objectives and any environmental considerations have been taken into account during its preparation;
- The likely significant effects on the environment, including issues such as biodiversity, flora, fauna; population and human health; soil and geology; water, air and climatic factors; material assets; cultural heritage including architectural and archaeological heritage and landscape;
- The measures envisaged to prevent, reduce and as fully as possible offset any adverse significant effects on the environment of implementing the plan;
- An outline of the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know how) encountered in compiling the required information;

- A description of the measures envisaged concerning monitoring in accordance with Article 10.

Note:

Throughout the SEA process all submission received during consultation were taken into consideration and incorporated into the SEA Environmental Report and the Non-Technical Report, where appropriate.

1.3 Appropriate Assessment

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) formed a basis for the designation of Special Areas of Conservation (SACs). Similarly, Special Protection Areas (SPAs) are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). Collectively SACs and SPAs are referred to as European sites. Article 6(3) of the Habitats Directive requires that “Any plan or project not directly connected with or necessary to the conservation of a site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives”. Under Article 6(3) of the Habitats Directive an Appropriate Assessment must be undertaken for any plan or programme that is likely to have significant effects on the conservation objectives of a European site. This includes the preparation of the *Draft Portumna Local Area Plan 2016-2022*. The purpose of an Appropriate Assessment is to identify the possible effects of implementing the plan on the conservation status of designated European sites within the plan area. An Appropriate Assessment has been carried out in parallel with the Plan and SEA and a Natura Impact Report accompanies the *Draft Portumna Local Area Plan 2016-2022*.

1.4 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment has been undertaken to inform the preparation of the Draft Portumna Local Area Plan by providing a broad assessment of flood risk throughout the plan area. This process informs the land-use zoning and objectives of the Plan in accordance with the Planning System and Flood Risk Management Guidelines, issued under Section 28 of the *Planning and Development Act 2000*, as amended. The Strategic Flood Risk Assessment accompanies the *Draft Portumna Local Area Plan 2016-2022*.

1.5 Legislative Context-EU Directive on SEA (Directive 2001/42/EC)

The EU Directive on Strategic Environmental Assessment or SEA (Directive 2001/42/EC) came into force in July 2001 and requires EU Member States to assess the likely significant environmental effects of plans and programmes prior to their adoption.

Article 1 of the SEA Directive states:

“The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.”

The Directive came into effect in an Irish context in July 2004 and was subsequently transposed into Irish law through the Planning and Development (Strategic Environmental Assessment) Regulations 2004, S.I. No. 436 and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. No. 435. A Strategic Environmental Assessment of the *Portumna Local Area Plan 2016-2022* is not a mandatory requirement however the Screening exercise that was completed in January 2015 determined that the Plan would be likely, if unmitigated, to have significant effects on the environment. These potential effects include:

- Adverse effects upon biodiversity and flora and fauna, including ecological networks;
- Adverse effects on the status of waters;
- Increase in flood risk and associated interactions with human health.

While this Environmental Report and the Local Area Plan are two separate documents they should be read in conjunction with each other. Additional reference to the potential effects and protection of

European Sites can be found within the Habitats Directive Assessment for the plan. This Habitats Directive Assessment has highlighted the potential effects that the Plan's implementation may have on any European site (designated on ecological grounds and including Special Areas of Conservation and Special Protection Areas). This Report is provided as a separate document titled “*Appropriate Assessment of the Portumna Local Area Plan 2016-2022 (Draft) Natura Impact Report*”.

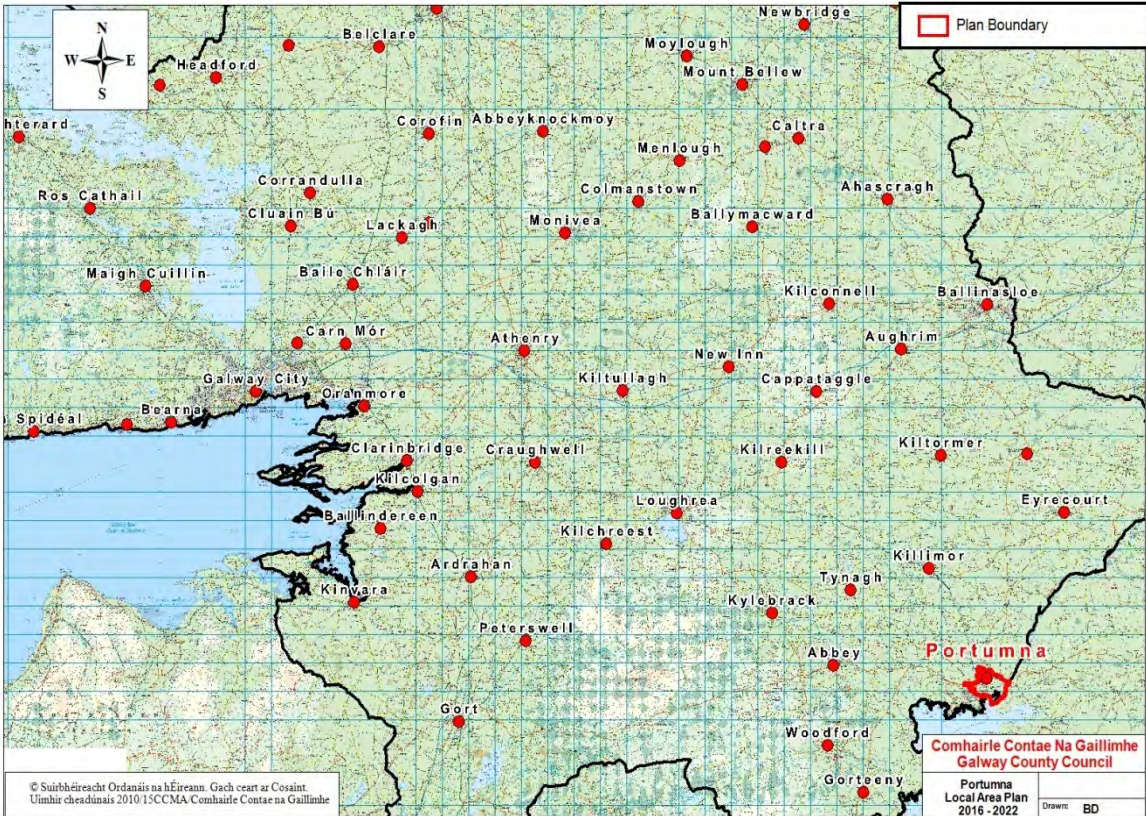


Figure 1.1 Context of the Plan area in relation to Galway Gateway & East Galway. (Source GCC).

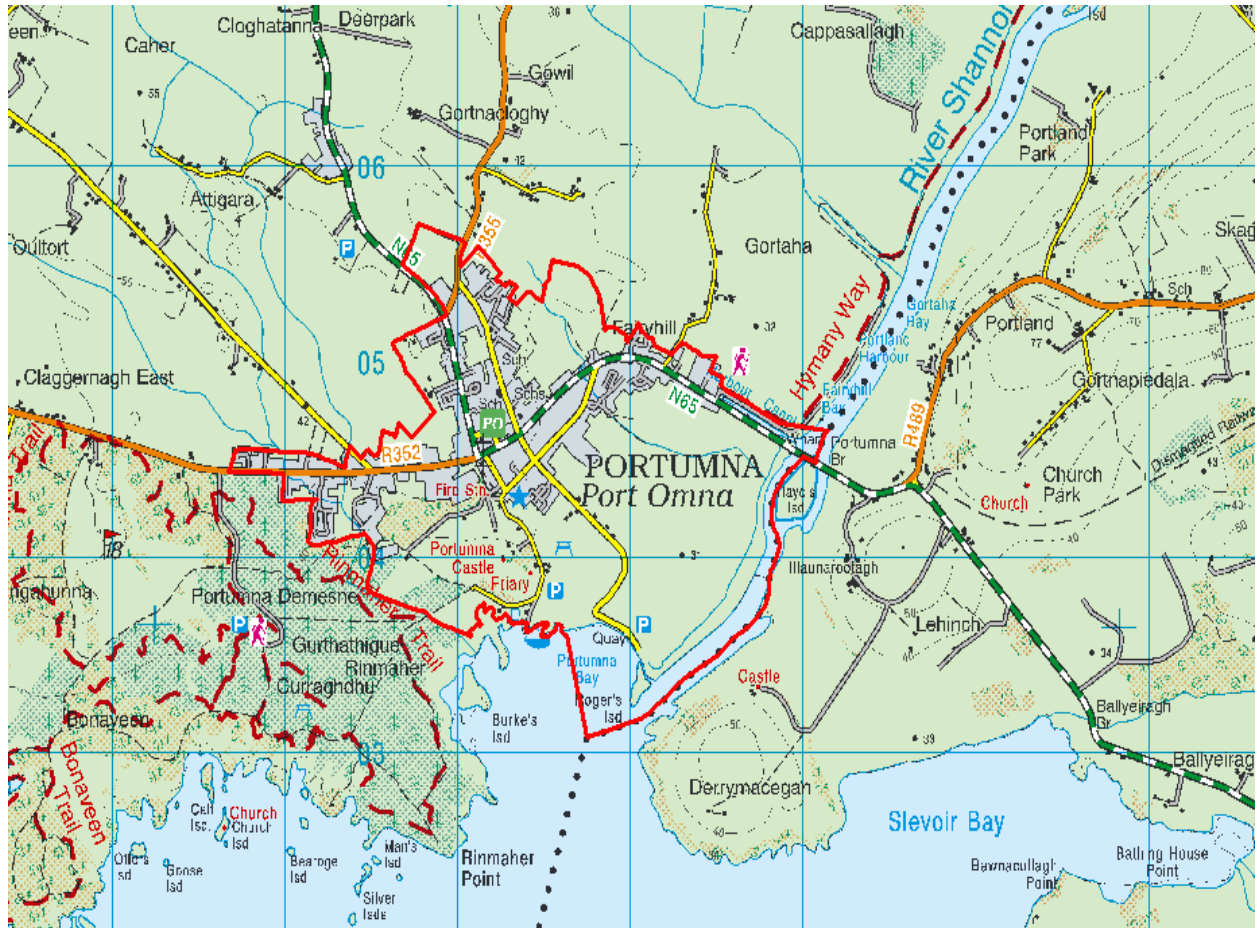
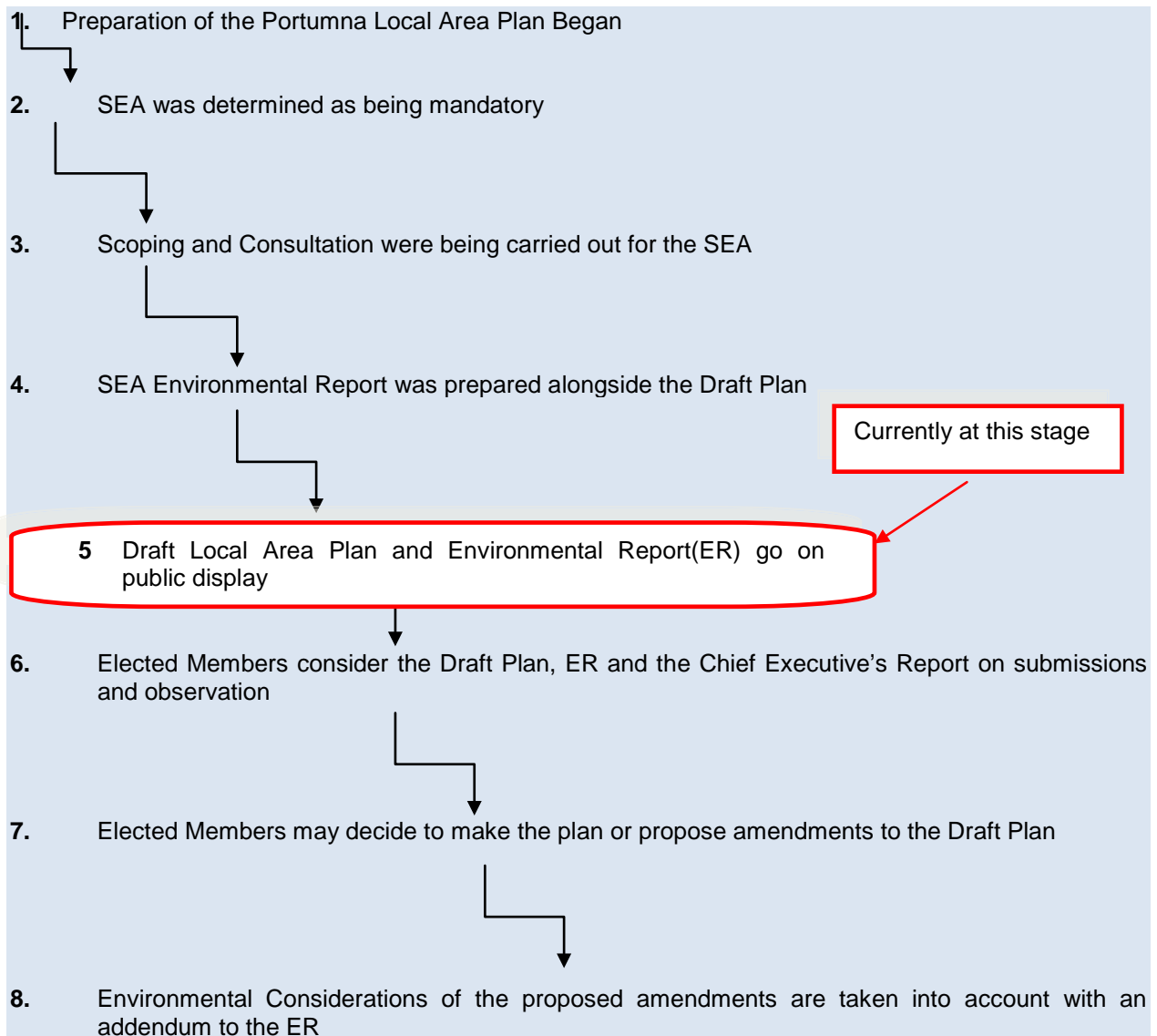


Figure 1.2 Portumna Draft Local Area Plan 2016-2022. (Source GCC).

Section 2 SEA Methodology

2.1 Introduction

This section outlines the Strategic Environmental Assessment (SEA) process methodology. The methodology used reflects the requirements of the SEA Directive and other SEA guidance documentation such as *“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”* published by the Department of the Environment, Heritage and Local Government and *“Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland – Synthesis Report”* published by the EPA in 2003. Moreover, the Directive was transposed into Irish law through the Planning and Development (Strategic Environmental Assessment) Regulations 2004, S.I. No. 436 and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. No. 435. The shaded area below outlines the key stages in the assessment of the draft plan which is carried out in accordance with the Directive and the aforementioned Regulations. The process is currently at the fifth stage in the preparation of the Local Area Plan as indicated in the following steps below.



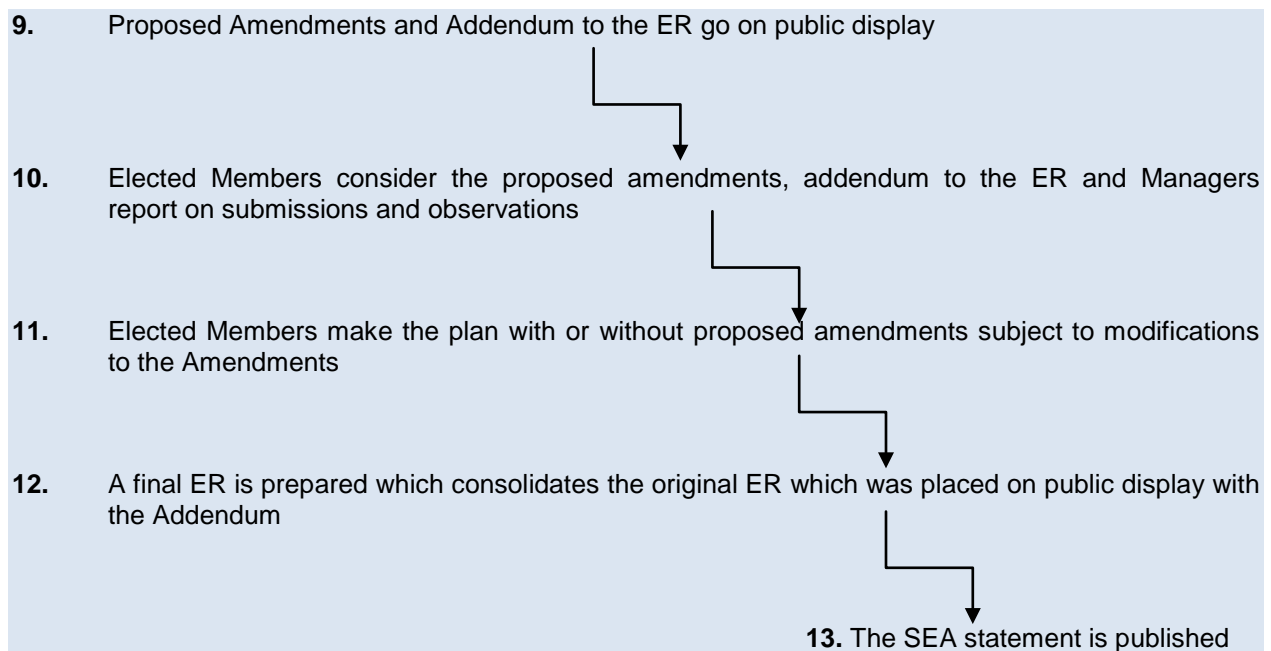


Table 2.1 Portumna Local Area Plan and SEA Stages

2.2 Screening

The screening process is the first stage of the Strategic Environmental Assessment. Screening assesses the need to undertake a Strategic Environmental Assessment of a plan or programme. It was determined that the plan warranted a Strategic Environmental Assessment. This Screening exercise has determined that the Plan would be likely, if unmitigated, to have significant effects on the environment.

2.3 Scoping

Scoping is the procedure whereby the range of Environmental issues and the level of detail to be included in the Environmental Report are decided upon in conjunction with the prescribed Environmental Authorities after preliminary environmental data collection. The scoping exercise for the *Draft Portumna Local Area Plan 2016-2022* was undertaken in April 2015. Scoping helps to focus the SEA on important issues such as those relating to existing and potential environmental issues and problems, therefore minimizing the waste of resources on unnecessary data collection. This scoping facilitated the selection of issues relevant to the environmental components which are specified under the SEA Directive and Regulations (as amended), namely biodiversity, flora and fauna; population, human health; soil and geology, water, air and climatic factors; material assets; cultural assets and landscape.

Scoping Submissions were received from the following statutory consultees:

- Environmental Protection Agency (EPA);
- The Department of Arts, Heritage and the Gaeltacht; and
- The Geological Survey of Ireland (GSI), on behalf of the Department of Community, Energy and Natural Resources.

Table 2.2 Scoping Submissions received from Statutory Consultees

Submission	Comment
<p>Department of Arts, Heritage and the Gaeltacht</p>	<p>The submission from the NPWS has raised a significant amount of issues relating to the Natura Impact Report and the Nature Conservation Sites. The submission reiterates that the plan must contain objectives for the conservation and protection of the environment. The wording of objectives in the natural heritage section of the plan should reflect or encompass key obligations and requirements as set out in the relevant legislation in relation to the various ecological corridors or natural heritage features.</p> <p>The Planning Authority is reminded that legislation in Ireland has changed since the last plan was adopted and cognisance should be taken in the context of European sites or Natura 2000 network.</p> <p>There is suggested wording that should be incorporated into the plan in relation to the text and objectives of the plan in relation to the European sites.</p> <p>In relation to the NIR and the plan it is suggested that in some limited cases that policies and objectives that contain further projects or lower level plans will be subject to appropriate assessment at a later stage. In other instances development objectives maybe such that potential impact on European Sites cannot be avoided, the impacts on European Sites must be assessed at plan level in the NIR. In addition it must be demonstrated how any mitigation measures which are specified at plan level will ensure that no adverse effects on site integrity will result.</p> <p>It is suggested that the Department is of the view that there is potential for the plan, or services or resources on which the plan area is reliant to have significant effects on European sites in view of the conservation objectives. All potential impacts in relation to development or increased usage or pressures need to be examined and assessed at plan level prior to their inclusion in the plan.</p> <p>It is stated that the implications of all parts of the plan, including zoning and land use designations and associated maps, strategies or other reports must be examined on their own and in combination with the plan and with other plans and projects. Only those plan elements that are demonstrated to be compliant with the Habitats Directive and Birds Directive should be incorporated into the plan.</p>

	<p>It is stated that one of the key benefits of the environmental assessment procedures is that they should influence and inform the plan during its preparation, and integrate ecological and other environmental considerations with the vision, policies and objectives for the future development and growth of the plan area.</p> <p>The implications of the plan for European sites in view of their conservation objectives must be assessed.</p> <p>The NIR is the resulting statement of the effects for the purposes of Article 6 of the Habitats Directive and its findings must be taken into account when the appropriate assessment is carried out and a determination is made as to whether or not the land use plan would adversely affect the integrity of a European Site.</p> <p>It is stated that the appropriate assessment cannot have a lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of a project on a European Site, it is stated that these standards should underpin the NIR.</p> <p>The appropriate assessment must be carried out prior to the adoption of the plan.</p> <p>The Department has included 13 points in relation to the preparation of a NIR and what information should be included, the following is a brief summary of this information:</p> <ul style="list-style-type: none">• The need for an NIR follows on from screening. The NIR should not contain the screening exercise;• The NIR should be a scientific assessment that presents relevant evidence, data and analysis and not just commentary, lists and tables;• The best scientific knowledge and objective information which are specified in legislation in relation to screening are also required in the preparation of the NIR;• The relevant environmental baseline and trends should be taken into account, bearing in mind changes and in combination effects which have occurred since site designations;• If a NIR is required, it should cover the entire plan, not just parts of the plan;• The NIR should focus on the likely significant effects of the plan, on its own
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	<p>and in combination with other plans and projects, on European sites in view of their conservation objectives whether these are generic or site specific;</p> <ul style="list-style-type: none">• An examination of the potential or existing effects of the plan, and the resources and services, on which it is reliant, must be undertaken to identify what European sites, and which of their conservation objectives are potentially at risk. In combination effects of other plans or projects must also be taken into account. This examination is also required to determine a “zone of influence” or “zone of impact” of the plan area. It is noted that a 15km distance for plans in existing guidance is an indicative figure and its application and validity should be examined and justified in each specific case with reference to the nature, size and location of plan area, and the sensitivities of the ecological receptors, and the potential for in combination effects;• The scientific basis on which site and conservation objectives are included or excluded from assessment and analysis should be presented;• The scientific basis on which plan policies and objectives and other plan elements are included or excluded from further assessment and analysis should be presented. It is suggested that this should be applied to all parts of the plan and all policies and objectives;• Where the plan level mitigation measures are put forward the necessary analysis should be presented to demonstrate that these will be effective in avoiding or removing risks of adverse effects on the integrity of European sites, or in managing future proposals where adverse effects maybe unavoidable;• The NIR and plan level mitigation measures should go beyond altering the wording of objectives to say that future assessment is required;• All parts of the plan, including zoning and land use zoning designations and associated maps and strategies, should be subject to assessment and should be compliant with the Habitats Directive. In the case of non-statutory strategies or other reports, these may only be incorporated into the plan , or given effect by the plan, if demonstrated to be compliant with Article 6 on their own and in combination with the
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	<p>plan itself and with other plans and projects;</p> <ul style="list-style-type: none">• The NIR should reach a clear and precise conclusion as to the implications of the plan for the conservation objectives of the relevant European sites. <p>In addition to the above there is specific reference to the Scope of the SEA. It is stated that the Biodiversity, Flora and Fauna section of the SEA should be undertaken by or in conjunction with suitably qualified ecologist(s), and other specialist as necessary, and in conjunction with the NIR to ensure full integration of biodiversity issues and concerns particularly in relation to nature conservation sites, protected species, and ecological corridors and stepping stones.</p> <p>The Environmental Report is required to contain information on the environmental characteristics of the areas likely to be affected significantly by the plan.</p> <p>For biodiversity, flora and fauna, the scope of the SEA should include:</p> <ul style="list-style-type: none">• All nature conservation sites;• Other ecological sites, including local biodiversity areas;• Natural and semi-natural habitats, and the habitats of protected species, including information on habitats in the plan area derived from surveys and habitat indicator mapping;• Species of wild flora and fauna, including rare and protected species and their habitats;• All watercourses, surface water bodies and associated wetlands, including flood plains and flood risk areas;• Other sites of high biodiversity value or ecological importance;• Ecological networks and corridors, and stepping stones;• Ecological mitigation/compensation measures or sites arising from existing projects, e.g habitat recreation areas or underpasses from road projects. <p>It is stated that no areas should be identified or targeted for development without basic information on the ecological sensitivities of the lands in question, including a habitat map, i.e. the precautionary principle should apply and no areas</p>
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	<p>should be committed to development in the absence of basic information on ecological constraints.</p> <p>The Environmental Report is required to contain environmental protection objectives. For biodiversity, flora and fauna these should integrate with the objectives and obligations of other directives such as Habitats Directive, the Birds Directive, the Water Framework Directive, Floods Directive, with the Wildlife Acts 1976-2000, the National Biodiversity Plan and the aims and objectives of the Heritage Plan and Biodiversity Plan.</p> <p>In conclusion it is stated that the strategic environmental objectives should be included for all nature conservation sites, protected species, and ecological corridors and stepping stones.</p>
<p>Environmental Protection Agency(EPA)</p>	<p>The EPA acknowledges the detailed scoping document that was submitted. The comments included in the submission relate to the specific questions that were posed in the scoping report.</p> <ul style="list-style-type: none"> • In relation to the Scoping Question No.1, there a list of additional Plans/Policies and Programmes that should be included and referenced in the plan; • In relation to the Scoping Question No.2, it is suggested that the Water Framework Directive Register of Protected Areas should be considered within Section 3. In relation to the level of detail to examine biodiversity, flora and fauna it is stated that it should be at an appropriate level in order to determine the potential for likely significant effects in implementing the plan; • In relation to the Scoping Question No.4, it is considered that the report should consider the increased seasonal loading (from Tourism/Recreational events etc); • It is suggested that the reference to the recent EPA publication, Integrating Climate Change into SEA in Ireland (EPA, 2015) could be useful in considering the assessment and integration of climate change into the SEA at an appropriate level; • In relation to the Scoping Question No.11, it is considered that the use of environmental indicators and associated data should reflect where possible the level at which data is available for. Where more detailed data is available for a particular environmental indicator, and where

	<p>particular aspects of the plan may impact on that environmental aspect it is considered that more detailed data should be incorporated as appropriate;</p> <ul style="list-style-type: none"> It is considered that the plan should consider reviewing/describing the environmental conditions which prevailed during the previous plan. It is considered that the development of the plan area is set out in the context of changes which occurred over the life time of the previous plan. This will provide a context for determining whether existing mitigation measures or policies/objectives need to be strengthened to protect particular environmental sensitivities.
Geological Survey of Ireland	The Geological Survey of Ireland has suggested that the heading of the Portumna Baseline Environmental section relating to -“Soil” should include Geology as both terms are integrated. It is suggested that this section should provide information about the Soils and Geology of the existing environment. A description of the bedrock and the geological heritage in the area should also be included and potential impacts recognised. Other issues included in the scoping submission relating to the Irish Geological Heritage, Land Mapping, Landslides and Groundwater.
Tipperary County Council	No comment to make on the Scoping Document.

Table 2.2 Scoping Submissions received from Statutory Consultees

In the framing of the Environmental Report the matters raised in the above submissions have been fully incorporated in the preparation of the plan and associated Environmental Report. Accordingly, the objectives of the plan and the Strategic Environmental Objectives (SEOs) of the Environmental Report have been prepared in accordance with the above recommendations.

2.4 Environmental Report

The content of the Environmental Report is set out in accordance with Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004, as amended 2011, as set out in Table 2.3.

Table 2.3 Structure of Environmental Report

Schedule 2B Information Required	Environmental Report
(a) . An outline of the contents and main objectives of the plan and relationship with other plans	Section 1-Introduction and Background Section 2-SEA Methodology Section 4-Review of Relevant Policies, Plans and Programmes Section 5-Draft Portumna Local Area Plan 2016-2022
(b).The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Section 3-Environmental Baseline
(c). The environmental characteristics of areas likely to be significantly affected	Section 3-Environmental Baseline
(d). Any existing environmental problems which are	Section 3-Environmental Baseline

relevant to the plan area, including in particular, those in relation to any areas of particular environmental importance such as areas designated pursuant to the Birds Directive, Habitats Directive	
(e). The environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation.	Section 3-Environmental Baseline Section 6-Environmental Assessment and Strategic Environmental Objectives Section 7-Development and Consideration of Alternatives Section 8-Assessment of Effects of Implementing the <i>Portumna Local Area Plan 2016-2022</i>
(f). The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural assets and landscape.	Section 7 & 8-Assessment of Significant Environmental Effects
(g). The inter-relationship between the above factors.	Section 3-Environmental Baseline and in each section as it arises
(h). The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan.	Section 9-Mitigation Measures
(i). An outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties encountered in compiling the plan.	Section 10-Monitoring
(k). A non-technical summary of the information provided under the above headings	Separate Document from that of Environmental Report.

Table 2.3 Structure of Environmental Report

2.5 Environmental Baseline Data and Other Strategic Actions

The SEA process is led by the environmental baseline (i.e the current state of the environment- biodiversity, flora and fauna, soil, water, air & climatic factors, cultural heritage, landscape etc.) to facilitate the identification, evaluation and subsequent monitoring effects of the plan area. Data was collected to describe the environmental baseline and its likely evolution without the implementation of the local area plan.

The SEA Directive requires that information on the baseline environment be focused upon the relevant aspects of the environmental characteristics which are likely to be affected by the implementation of the plan. The SEA Directive aims to avoid duplication of the assessment whereby a strategic action forms part of a hierarchy. In order to describe the baseline, the current state of the environment data was collated from currently available, relevant environmental sources.

2.6 Alternatives

The Strategic Environmental Assessment Regulations 2004(S.I.No.436 of 2004) (as amended) also require the environmental report to include an “outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties encountered in compiling the required information (Schedule 2B)”.

The identification and assessment of alternatives is a key function of the SEA process and one which commenced at an early stage in the process of plan making. It is likely that the range of alternatives evolve as the process progresses which require evaluation in terms of the likely environmental consequences of alternative development strategies for the plan. Taking into account the above and the geographical scope of the plan, alternatives were formulated and an alternative identified.

2.7 SEA Statement

Following the adoption of the plan, the competent authority is required to make available the adopted Local Area Plan and a statement setting out relevant “information on decision” as set out in Article 9 of the SEA Directive and by Article 13 of the Planning and Development Regulations 2001(as amended) and by Article 7 of the SEA Regulations. The following is required to be included in the SEA Statement:

- How environmental considerations have been integrated into the plan highlighting the main changes to the plan which resulted from the SEA process;
- How the Environmental Report and consultations have been taken into account, summarising the key issues raised in consultations with the Environmental Report and the consultations that have been taken into account;
- Summarising the key issues raised in consultations and in the Environmental Report indicating what action if any was taken in response.

In addition to the above, the reasons for choosing the plan in light of the alternatives, identifying the other alternatives considered, commenting on their potential effects and an explanation of why the plan was selected.

2.8 Legislative Conformance

This report complies with the provisions of the SEA Regulations and is written in accordance with schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No.436 of 2004) as amended. Section 2.4 is a reproduction of the checklist of the information to be contained in the Environmental Report (DEHLG, 2004) and includes the relevant sections of this report, which deals with the above requirements.

2.9 Difficulties Encountered

The lack of centralised data source in relation to the environmental baseline data for the county posed a challenge to the SEA process.

2.10 SEA Difficulties and Data Gaps

- The lack of centralised data sources in relating to environmental baseline data for the county posed a challenge to the SEA process. The difficulty is one, which is encountered by Local Authorities across the country and is being overcome by investing in the collection of data from various sources and through the use of Geographical Information Systems;
- Although Corine Mapping and aerial photography was available no detailed habitat mapping was available for Portumna town;
- There is no record or mapping of invasive species within plan area.

Section 3 Environmental Baseline

3.1 Introduction

This section identifies the environmental baseline for the *Draft Portumna Local Area Plan 2016-2022*. The baseline information presents the environmental context within which the plan will operate and the opportunities, constraints and targets placed on the plan in this regard. The environmental data is described in line with the legislative requirements of the SEA Directive and Regulations, as amended, under the following environmental parameter headings:

- Biodiversity, Flora and Fauna;
- Population & Human Health;
- Soil & Geology;
- Water;
- Air and Climatic Factors;
- Material Assets;
- Cultural Heritage; and
- Landscape.

The inter-relationship between the environmental parameters will also be considered within this section. The purpose of presenting the environmental baseline as part of the SEA process is outlined as follows:

- Support the process of identifying significant environmental effects;
- Support the identification of existing environmental problems;
- Provide a baseline against which future monitoring programmes can be set up and data compared.

The inter-relationship between the different environmental parameters is critical in understanding the assessment of potential significant effects on the environment as consequences of the proposals and objectives set out in the draft plan. Under each environmental parameter below, the inter-relationship with all other environmental parameters is set out in a table format. Whilst all environmental parameters are described, certain parameters are identified as being of greater significance and may be subject to greater impacts associated with the implementation of the plan. In addition to the above an overview of the overall level of environmental sensitivity of the plan area is provided in a Cumulative Environment Assessment. This section also sets out the “do-nothing” scenario which is an indication of how current environmental conditions would change over time without the implementation of the plan.

3.2 Geographical Location and Physical Characteristics of Portumna

Portumna is located in south-east of the county, approximately 68 kilometres south east of Galway City, 31 km south of Ballinasloe and 24 kilometres west of Birr. The town straddles the county boundary with County Tipperary and it is recognised as the principle urban settling in south-east of the county and serves an extensive rural hinterland on either side of the county divide. The topography and natural features of the area have influenced the pattern and form of development in the town over the years. Portumna is bounded by the River Shannon to the east, Lough Derg to the south and Portumna Forest Park to the south-west. The Shannon forms a natural boundary between County Galway and County Tipperary.

Portumna is identified as a “Key Town/Other Town” in the settlement hierarchy for the county. This entails it functioning as a self sufficient service hub, offering a range of services including health, community, finance, employment, educational and retail provision to a broad catchment population.

3.3 Relationship of the plan area with the Galway County Development Plan 2015-2021

Today Portumna is identified as ‘Key Town/Other Towns’, in the core strategy of the *Galway County Development Plan* and the town is regarded an important role in particular for south east Galway.

3.4 Biodiversity, Flora and Fauna

Portumna supports a wide diversity of natural and semi-natural habitats and a wide range of plant and

animal species, which have come under threat due to development pressures and increased demand for new development land.

Green space makes up large parts of the surrounding countryside within the plan area and consists of a variety of habitats including corridors which provide for the movement of wildlife. Green space within the plan area is comprised of agricultural lands, mainly pastures, with smaller areas of agricultural lands with natural vegetation and non-irrigated arable land. Areas of transitional woodland scrub and coniferous forests lie to the south of the town.

The River Shannon, with tributaries such as the Fairyhall River, the Deerpark River, the Gortyneill stream and the Lickmolassy stream transverse the plan area. The river acts as a corridor supporting areas of biodiversity within the town.

Man-made habitats within the plan area are also important biodiversity areas. Gardens provide habitats for a range of wildlife including various bird species, invertebrates, such as bees and butterflies and mammals, such as hedgehogs, mice, rats and foxes. These species move around between gardens using hedgerows and vegetated areas. These urban green spaces, however small, are therefore of importance as they form part of a network of green spaces across the plan area including gardens, parks, graveyards, amenity walks, railway lines and patches of woodland and scrub within which animals and plants continue to thrive.

3.4.1 Woodlands

The most significant woodlands in the plan area straddle the south western plan boundary. This area of woodland also adjoins the Portumna Castle Demense through a significant linear tree cluster.

3.4.2 CORINE Land Cover Mapping⁶

The CORINE land cover mapping for Portumna for the year 2012 (most updated version) classifies land cover under different headings and indicates that the main land use is Discontinuous Urban Fabric, Pastures followed by the land uses of Agriculture with significant areas of natural vegetation, inland marshes and pastures. The main differences in the six year period between 2006 and 2012 period is the transformation from pastures to Agriculture with significant areas of natural vegetation in the east of the plan area.

⁶ European Environment Agency Coordination of Information on the Environment (2004) *Ireland's Corine Land Cover 2000 (CLC2000)* Copenhagen: EEA

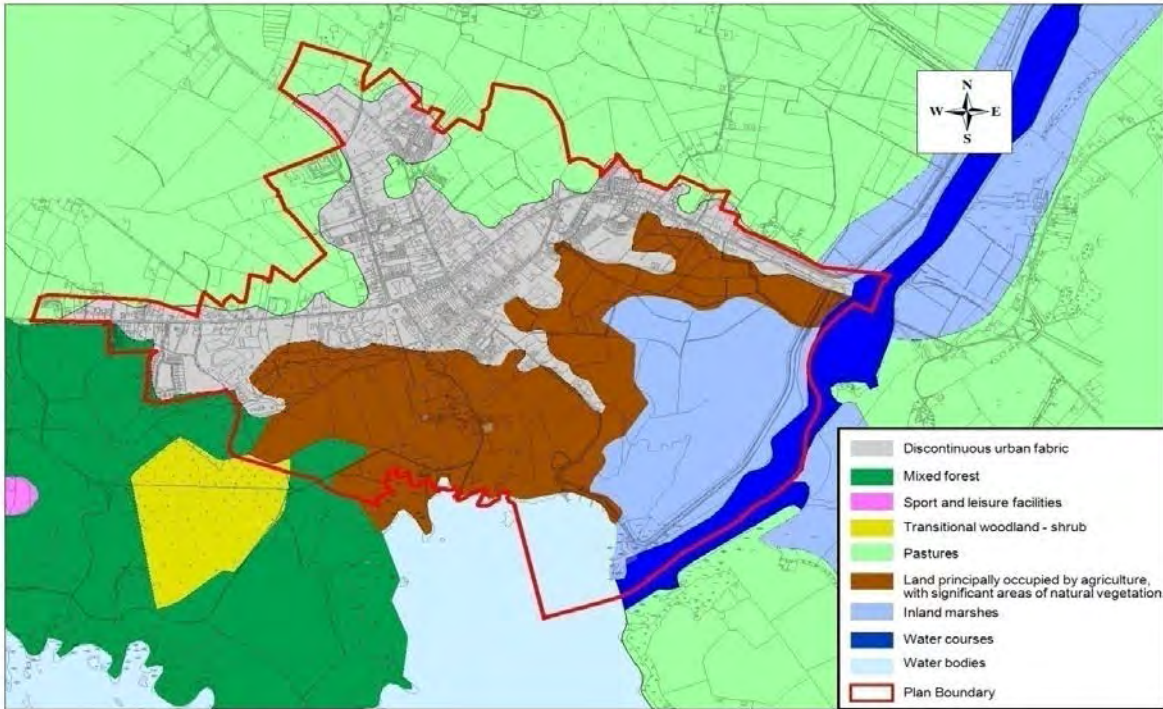


Figure 3.1 Corine Land Cover 2012.(Source GCC).

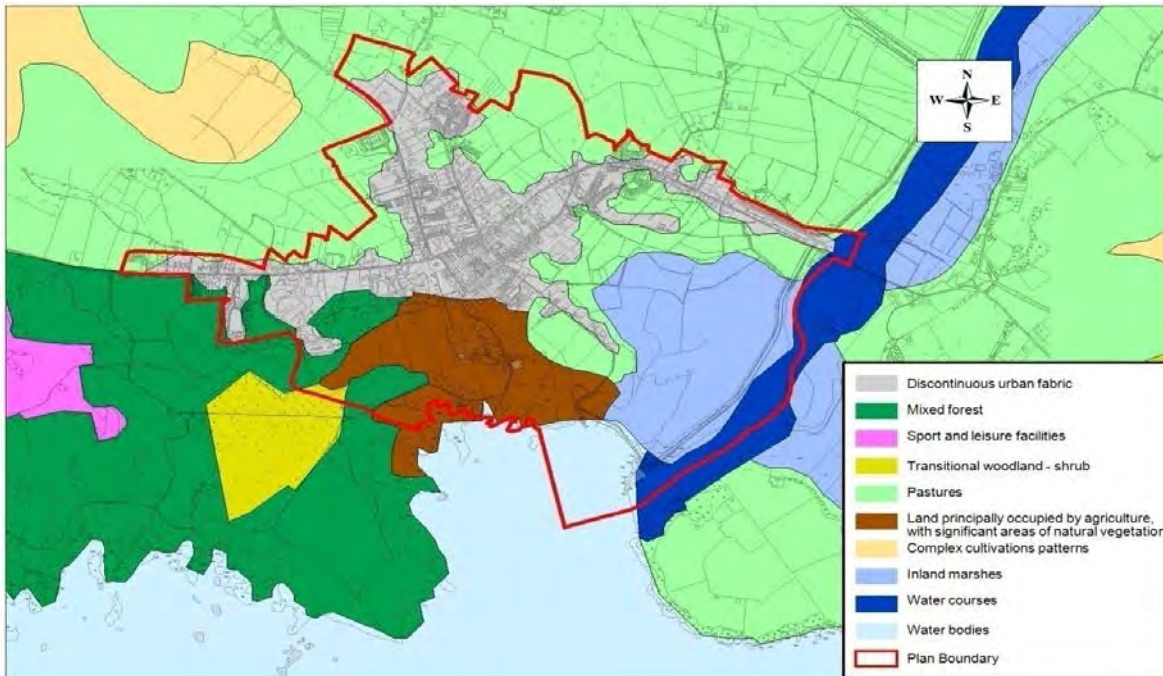


Figure 3.2 Corine Land Cover 2006. (Source GCC).

3.4.3 Ecological Networks

Article 10 of the Habitats Directive recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities.

Within and surrounding Portumna, the ecological networks are made up of components including the water bodies of Lough Derg, the River Shannon, the Fairyhall River, the Deeparpark River, the Gortyneill stream and Lickmolassy stream, together with their tributaries and banks, the various woodlands, parks, gardens and hedgerows within and surrounding the plan area and lands used for agriculture. These components provide habitats and facilitate linkages to the surrounding countryside for flora and fauna.

3.4.4 Invasive Alien Species

Although there are few records of invasive alien species in Portumna, it is highly likely that species such as the Japanese Knotweed *Fallopia japonica* and Himalayan Balsam *Impatiens glandulifera* amongst others occur in the area. Aquatic invasive species such as the Zebra Mussel *Dreissena polymorpha* and Asian Clam *Corbicula fluminea* have the potential to be spread through water bodies in the area and have the ability to become highly invasive in a short period of time and at high densities, altering the food web and soil competing with native mussel species.

3.4.5 Designations & Natural Heritage Areas

The transposition of the EU Habitats Directive Assessment into Irish Law by the European Communities (Birds and Natural Habitats) Regulations 2011, provides the legal basis for the protection of habitats and species of European importance in Ireland. The legislative protection of habitats and species provided by the Habitats Directive has been implemented in Ireland and throughout Europe through the establishment of a network of designated conservation areas known as the European Network. The European Network includes sites designated as Special Areas of Conservation (SACs), under the EU Habitats Directive and Special Protection Areas (SPAs) designated under the EU Birds Directive. Under the Habitats Regulations all designated sites are referred to as European Sites. It is also noted that, under the Habitats Regulations, the term European Site includes cSACs as well as SACs.

There are a number of ecologically designated sites within and surrounding the Portumna plan area. It is noted that some of the ecological sensitivities that have been outlined in this section occur beyond the fringes of the plan area. They are included, however, to ensure that areas which could be impacted as a result of implementing the plan are identified and assessed.

3.4.5.1 Special Protection Areas

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) - referred to as the Birds Directive - by the DEHLG due to their conservation value for birds of importance in the European Union.

SPA's are designated in areas that support 1% or more of the population of bird species listed on Annex I of the EU Birds Directive; 1% or more of the population of migratory species; and more than 20,000 waterfowl. There are two designated SPAs in the plan area-The Lough Derg(Shannon) (Site Code 004058) and Middle Shannon Callows(Site Code 004096), which transverse the plan area; these can be seen on map No 3.3 and are summarised as follows:

- **Lough Derg (Shannon) SPA⁷**
Site Code: 004058

Lough Derg is the largest of the Shannon lakes, being some 40km long. The greater part of the lake lies on Carboniferous limestone and it shows high hardness levels and alkaline pH from its mainly limestone catchment basin, and it has most recently been classified as a mesotrophic system. Lough Derg designated as a Special Protection Area under the EU Birds Directive is of importance for both breeding

⁷ Text in this section is taken from the National Parks and Wildlife Service's Site Synopses. Full Site Synopses for these designations can be found in **Appendix III**

and wintering birds. It is a breeding colony for Common Tern, Black-Head Gull, Cormorant, Great Crested Grebe and Tufted Duck. Furthermore, the lake is important for a range of waterfowl species especially diving ducks. Lough Derg is of conservation interest for its fish and freshwater invertebrates. Lampreys, listed on Annex II of the E.U. Habitats Directive, are known to occur and the lake contains a landlocked population of sea lamprey (*Petromyzon marinus*). The endangered fish species Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Derg, one of only four sites (L. Neagh, L. Erne, L. Ree and L. Derg) in which it occurs. Lough Derg is also a well-known fishing lake with a good Trout (*Salmo trutta*) fishery. Atlantic Salmon (*Salmo salar*) also use the lake as a spawning ground. Lough Derg was classified as being strongly eutrophic in the early 1990s. Since 1997, a monitoring programme on the Shannon lakes has shown that the symptoms of eutrophication previously documented (i.e. high chlorophyll level and reduced water visibility) have been ameliorated significantly. These reductions have coincided with the invasion of the Shannon system by the Zebra Mussel (*Dreissena polymorpha*), a species which feeds on plankton, and also with measures to reduce phosphorus in sewage plants in the catchment. Enrichment of the lake, both by agricultural run-off and sewage, remains a threat and could affect the bird populations, especially the diving duck. Whilst the presence of Zebra Mussel in Lough Derg appears to have improved water quality in the lake, in the long-term this invasive bivalve may threaten the ecology of the lake. Recreational activities presently cause some disturbance to the birds and an increase in such activities would be of concern.

Lough Derg SPA is of high ornithological importance as it supports nationally important breeding populations of Common Tern, Cormorant, Great Crested Grebe, and probably Tufted Duck and Black-headed Gull. In winter, it has nationally important populations of Tufted Duck and Goldeneye, as well as a range of other species including Whooper Swan. The site is still used on occasions by Greenland White-fronted Goose. The presence of Common Tern, Whooper Swan and Greenland White-fronted Goose is of particular note as these are listed on Annex I of the E.U. Birds Directive.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A017	Cormorant	<i>Phalacrocorax carbo</i>
A061	Tufted Duck	<i>Aythya fuligula</i>
A067	Goldeneye	<i>Bucephala clangula</i>
A193	Common Tern	<i>Sterna hirundo</i>

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest.

Thus, a second objective is included as follows:

Objective: To maintain or restore the favourable conservation condition of the wetland habitat at Lough Derg (Shannon) SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

- **Middle Shannon Callows SPA**
Site Code 004096

The Middle Shannon Callows SPA is a long and diverse site which extends for approximately 50km north of the town of Athlone (At the southern point of Lough Ree) to the town of Portumna (northern point of Lough Derg).

Two habitats listed in Annex I of the EU Habitats Directive are well represented within the site-Molinia meadows and lowland hay meadows. It qualifies as a site of international importance for wintering

waterfowl and for the Whooper Swan and Corncrake which are listed on Annex I of the EU Habitats Directive. It is also of national importance for breeding waterfowl.

The Shannon Callows continues to hold approximately 40% of the Irish population of Corncrake, a species of global conservation concern that is also listed on Annex I of the EU Birds Directive.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse. In winter the site is internationally important for the total numbers of birds (regularly exceed 20,000) and for Whooper Swan in particular. It also holds nationally important populations of a further five species. Some of the wintering species are listed on Annex I of the EU Birds Directive, including Whooper Swan, Greenland White-fronted Goose and Golden Plover. In summer the site supports important populations of breeding waders. Perhaps the most important species which occurs in the site is Corncrake (the site holds 40% of the national total), as this is listed on Annex I of the EU Birds Directive and is Ireland's only globally endangered species.

Main conservation objective:

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A038	Whooper Swan	<i>Cygnus cygnus</i>
A050	Wigeon	<i>Anas penelope</i>
A122	Corncrake	<i>Crex crex</i>
A140	Golden Plover	<i>Pluvialis apricaria</i>
A142	Lapwing	<i>Vanellus vanellus</i>
A156	Black-tailed Godwit	<i>Limosa limosa</i>
A179	Black-headed Gull	<i>Chroicocephalus ridibundus</i>

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest.

Thus, a second objective is included as follows:

Objective: To maintain or restore the favourable conservation condition of the wetland habitat at Middle Shannon Callows SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

3.4.5.2 Special Areas of Conservation

Special Areas of Conservation (SACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) - referred to as the Habitats Directive - by the DEHLG due to their conservation value for habitats and species of importance in the European Union. SACs are designated in areas that support habitats listed on Annex 1 and/or species listed on Annex II of the Habitats Directive. There are two SACs within the plan area-The River Shannon Callows(Site Code 000216) and the Lough Derg,North-East Shore SAC(Site Code 002241) which transverse the plan area. These are summarised as follows:

- **River Shannon Callows
Site Code 000216**

The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the river between the towns of Athlone and

Portumna. The site is a Special Area of Conservation SAC selected for the following habitats and/or species listed in Annex I/II of the EU Habitats Directive.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland, and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive occur within the site – Molinia meadows and lowland hay meadows with good examples of a further two Annex habitats (both with priority status). In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration, and in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.

Objective: To maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

Code	Description
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)
6510	Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)
8240	Limestone pavements*
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)*

* denotes a priority habitat

Code	Common Name	Scientific Name
1355	Otter	<i>Lutra lutra</i>

- Lough Derg, North-East Shore SAC**
Site Code 002241

Lough Derg is the lowest order lake on the River Shannon, is one of the largest bodies of freshwater in Ireland. This SAC, however, only includes the northern shore of the lake from the mouth of the Cappagh River in the north west to just below Black Lough at the north-eastern shore. The site is a Special Area of Conservation SAC selected for the following habitats and/or species listed in Annex I/II of the EU Habitats Directive.

The lake is rated as nationally important for waterfowl. The entire lake, including all of the islands, is a designated SPA (Special Protection Area). The lake also supports a number of the Greenland White-fronted Goose, a bird species listed on Annex I of the E.U. Birds Directive. There is a Wildlife Sanctuary at the north western edge of the lake.

Lough Derg is of conservation interest also for its fish and freshwater invertebrates. Lampreys, are known to occur and the lake contains an apparently self-sustaining landlocked population of Sea Lamprey (*Petromyzon marinus*). The endangered fish species Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Derg. Lough Derg is also a well known fishing lake with a good Trout (*Salmo trutta*) fishery. Atlantic Salmon (*Salmo salar*) also use the lake as a spawning ground.

Otter and Badger have been recorded within the site.

Land use within the site is mainly of a recreational nature with many boat hire companies, holiday home schemes and angling clubs located at the lake edge.

Recreational disturbance may pose a threat to the wintering wildfowl populations, though tourism is

scaled down during the winter. The water body is surrounded mainly by improved pastoral farmland to the south and east, with areas of bog to the south-west and west. Coniferous plantations are present along the west and north- west shore and small areas of these are included within the site. If these areas are felled no further planting should take place as afforestation damages the wetland habitats between the plantation and lake edge.

The main threats to the quality of the site are water polluting activities resulting from intensification of agricultural activities around the lake shore, uncontrolled discharge of sewage, which is causing eutrophication of the lake, and housing and boating development which has resulted in the destruction of lakeshore habitats. There is also significant fishing and shooting pressure on and around the lake. Forestry can result in the loss of some areas of wetland habitat. The spread of Zebra Mussel (*Dreissena polymorpha*) in Lough Derg also poses a threat to the ecology of the lake.

This is a site of significant ecological interest, with six habitats listed on Annex I of the E.U. Habitats Directive. Four of these are priority habitats - *Cladium* fen, alluvial woodland, limestone pavement and Yew woodland. Other annexed habitats present include alkaline fen and Juniper scrub formations on heath and calcareous grasslands. In addition, the lake itself is an SPA that supports important numbers of wintering wildfowl, Greenland White-fronted Goose, Common Tern and Cormorant, a number of which are listed under Annex I of the E.U. Birds Directive.

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

Code	Description
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands
7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> *
7230	Alkaline fens
8240	Limestone pavements*
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)*
91J0	<i>Taxus baccata</i> woods of the British Isles*

* denotes a priority habitat

3.4.5.3 Natural Heritage Areas

Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geo-morphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geo-morphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000, and are legally protected under the Wildlife Acts, 1976-2000.

There are no NHA and two p NHA, Lough Derg (Site Code: 000011) and River Shannon Callows(Site Code: 000216) in Portumna. These are mapped on Figure 3.3 overleaf.

- **Lough Derg pNHA⁸**
Site Code:000011
- **River Shannon Callows pNHA⁹**
Site Code: 000216

⁸ Text in this section is taken from the National Parks and Wildlife Service's Site Synopses. Full Site Synopses for these designations can be found in **Appendix III**

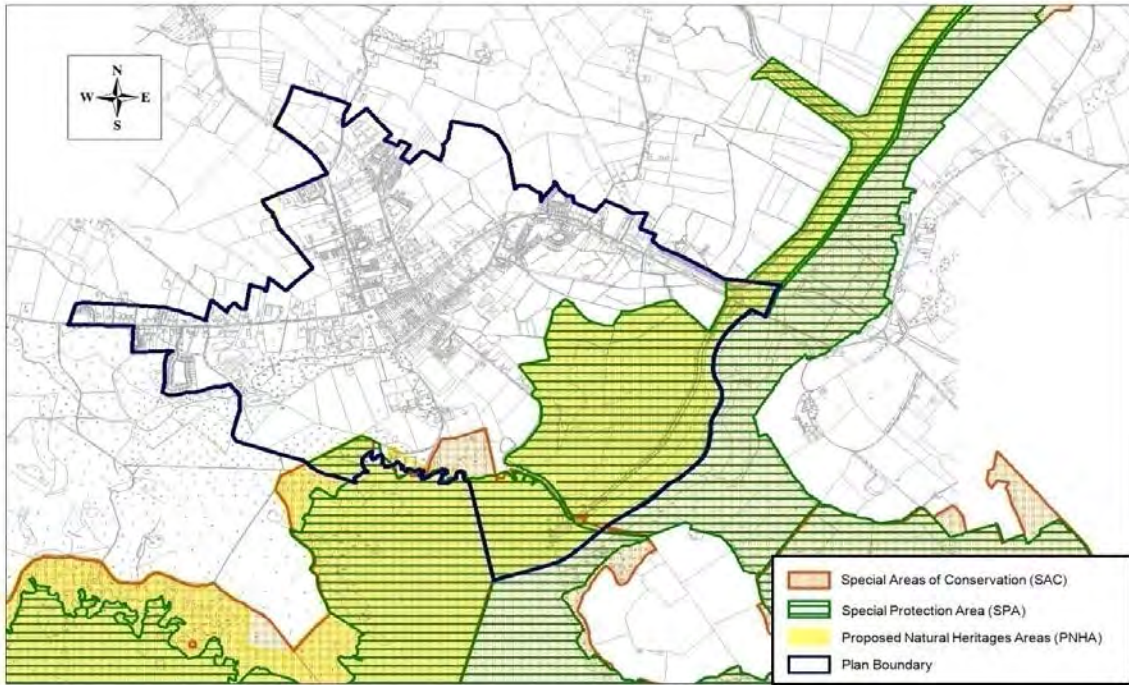


Figure 3.3 Designated Sites & National Heritage Areas within and surrounding the Plan Area. (Source GCC).

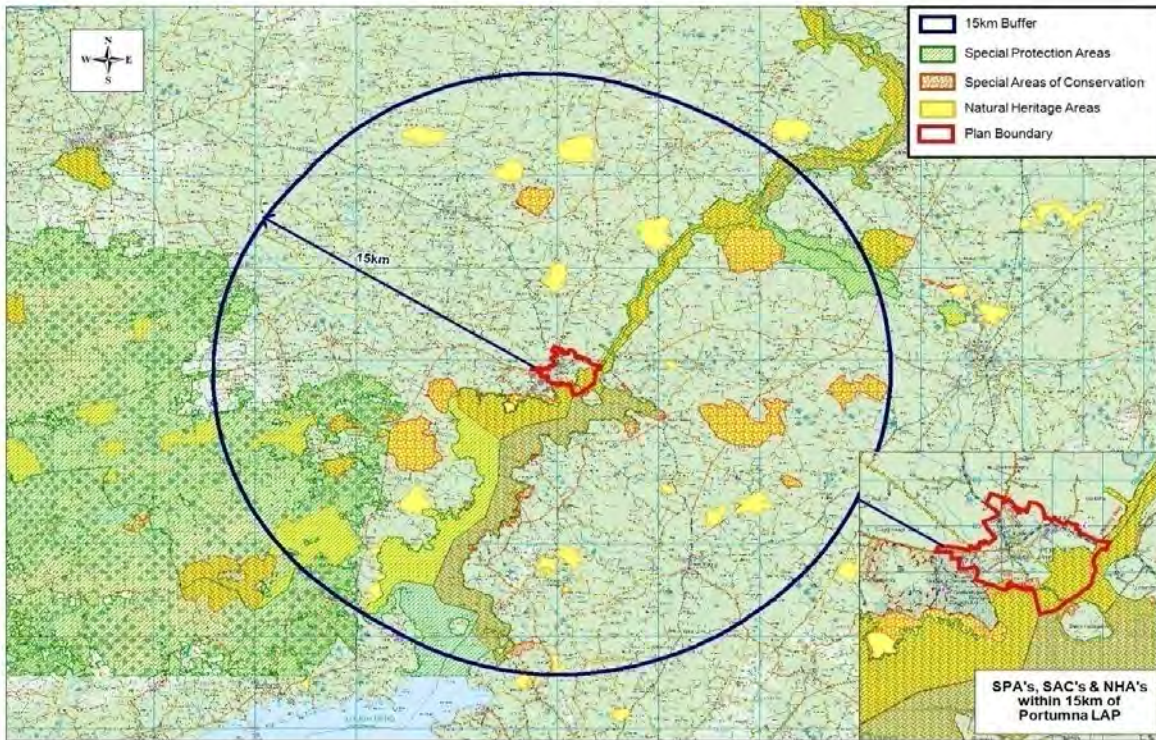


Figure 3.4 Designated Sites & National Heritage Areas within 15km of Plan Area. (Source GCC).

3.4.6 Register of Protected Areas

In response to the requirements of the Water Framework Directive a number of water bodies or parts of water bodies which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife have been listed on Register of Protected Areas (See Figure 3.15). A number of water bodies in the plan area have been listed on the Register of Protected Areas for Water Dependant Species and Drinking Water (Groundwater).

3.4.7 Existing Environmental Problems

There are a number of issues relating to biodiversity, flora and fauna within the plan area.

- There are a number of ecological networks throughout the plan area. Increased development pressures as a result of the projected growth in population may result in the development of the plan area on greenfield lands and/or the removal of trees/hedgerows which may impact on these networks and the integrity of designated areas;
- Habitat loss and fragmentation can occur as a result of development;
- Development in Portumna is generally buffered from the designated ecological sites. The site synopsis for these sites identify certain threats to the conservation value of these sites-tourism activities are identified in relation to the Lough Derg, North-East Shore SAC in the form of boating, fishing and shooting pressures on and around the lake;
- Aquatic flora and fauna is vulnerable to all forms of pollution such as that which can occur as a result of agricultural run-off and industrial and municipal effluents. As identified under Figure 3.18, several water bodies within and surrounding the area are “at risk” with regard to meeting legislative water quality objectives under the Water Framework Directive;
- Disturbance of wildlife, and particularly birds, occur as a result of inappropriately sited development and increased recreational pressure;
- The spread of invasive alien species is particularly important threat to local biodiversity as they compete for space and food.

3.4.8 Evolution of Biodiversity, Flora and Fauna in the absence of a Local Area Plan

In the absence of a Local Area Plan, there would be no framework to guide where development should occur and planning applications would be assessed on a case by case basis with no overall vision for the plan area. Flora and fauna, habitats and ecological connectivity would be protected under a number of largely independent strategic actions relating to biodiversity and flora and fauna protection. The evolution of biodiversity and fauna would be dependent on the rate and extent of any such developments which would take place. There would be limited considerations of the inter-connections between such things as climate change and biodiversity and therefore no provisions made to contend with future climate change.

Developments along or adjacent to the banks or rivers could result in a reduction in ecological connectivity within and between a number of habitats. Pollution of water bodies as a result of any future development along river catchments would likely to adversely impact aquatic biodiversity and flora and fauna including salmonid species and other species protected under Annex II of the Habitats Directive.

In the absence of a Local Area Plan, any greenfield development would adversely impact upon biodiversity and flora and fauna by replacing natural or semi-natural habitats with artificial surfaces.

3.4.9 Inter-relationship with Other Environmental Parameters

Bio-diversity has an inter-relationship with all environmental parameters presented in this section. There is a significant overlap between nature, human beings, soil, landscape and water.

	PHH	SG	W	AC	M	CH	L
Biodiversity, Flora & Fauna	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.5 Population and Human Health

3.5.1 Population context

The National Spatial Strategy sets out a national settlement structure which focuses on growing urban centres such as the identified gateways, the hubs, linked hubs and larger towns. It is envisaged that these areas would reach a sufficient size or 'critical mass' in order to enhance economic competitiveness within the region. The *Regional Planning Guidelines for the West Region 2010-2022* prescribe that an additional 12,640 persons will be living in the County (not including Galway City) by 2022. Portumna is on Tier 4 of the County Settlement Strategy hierarchy and its role as 'Other Towns' is regarded as a key service centre and driver of growth for the immediate and surrounding area.

In terms of population trends, according to the most recent 2011 CSO figures, the total population of Portumna was recorded as 1,530 persons. This represents a population increase of 10 % (153 persons) from the previous census of 2006 (see Table 3.1).

The population growth target for Portumna as set out in the current County Development Plan is an additional 230 persons by 2021. This projected forecast will require housing land of 6.48ha, or 9.72ha with 50% over-zoning, in order to accommodate residential development over the plan period. The Local Area Plan will consider various development zoning and phasing options so as to comply with the Core Strategy as outlined within the *Galway County Development Plan* and to ensure that suitable lands are brought forward for development during the plan period.

Population Census 2002	Population Census 2006	Population Census 2011
1,235	1,377	1,530

Table 3.1 Population Trend for Portumna for Census Periods 2002 – 2011

3.5.2 Age Profile

Figure 3.5 illustrates the age structure of the Portumna population as recorded on Census Night 2011 (Series 2) and compares it to the 2006 census (Series 1). Portumna has a large percentage of its population in the 25-39 age brackets. In the majority of age brackets the population recorded in the 2011 census has increased from that of the 2006 census. This reflects the increase in population as outlined under Section 3.5.1.

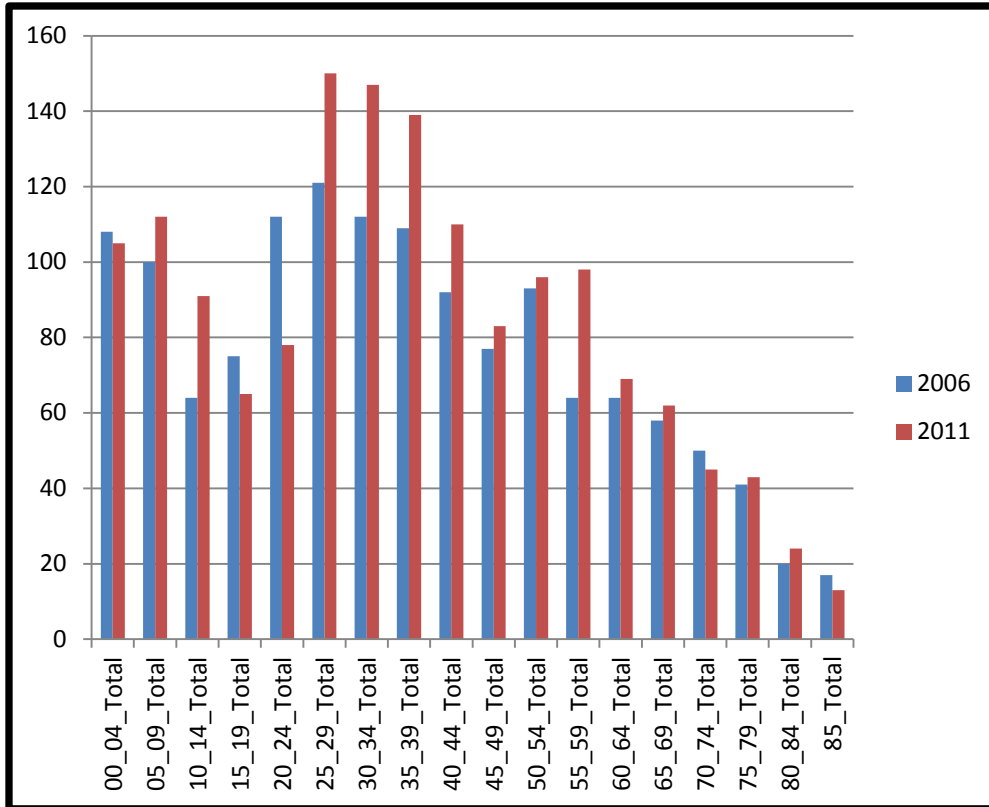


Figure 3.5 Portumna Age Profile 2006-2011

3.5.3 Education Profile

Figure 3.6 illustrates the education profile of the plan area. Portumna has a higher percentage of people who have completed upper secondary education than any other category of education. The percentage within this cohort that proceeds to vocational or technical education is higher than those attending higher certificate courses.

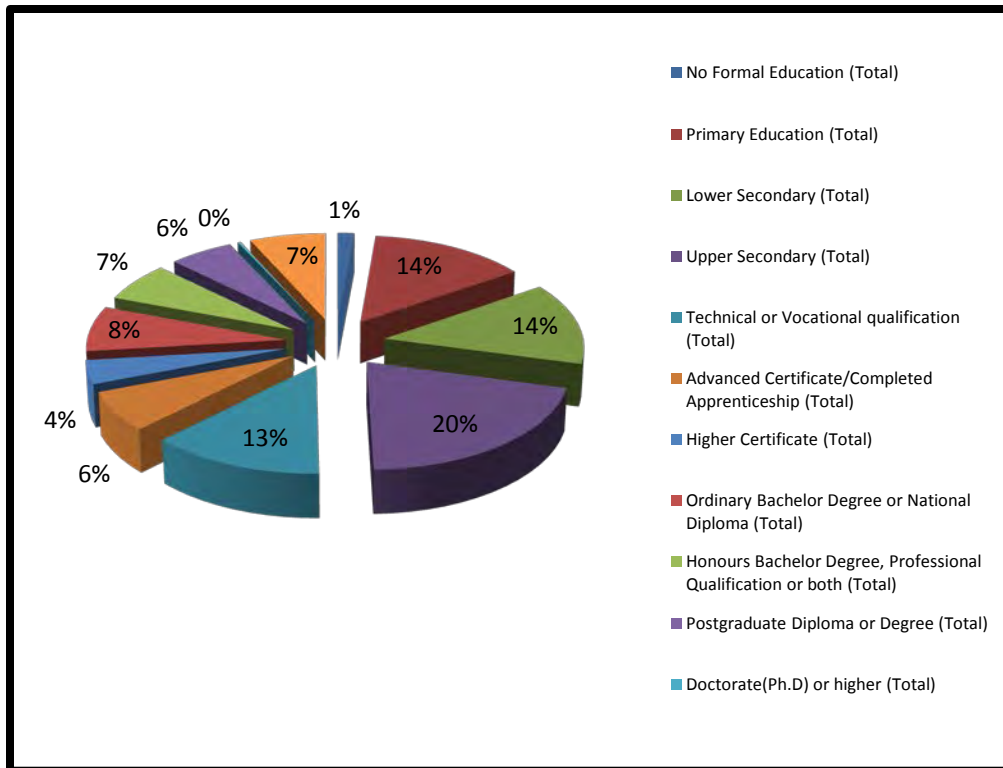


Figure 3.6 Education Profile

3.5.4 Travel Patterns

Table 3.2 shows that travelling by car to work, school or college is the main mode of transport for people in Portumna (approximately 40% as car driver and 13% as car passenger). Public transport would appear non-existent based on the number of people utilising this mode of transport. In addition to the private car as the main mode of transport, a substantial number of people travel on foot (approximately 31%).

Population aged 5 years and over by means of travel to work, school or college	
On foot	255
Bicycle	8
Bus, minibus or coach	25
Train, DART or LUAS	1
Motorcycle or scooter	1
Car driver	336
Car passenger	111
Van	37
Other	20
Not stated	41
Total	835

Table 3.2 Population aged 5 years and over by means of travel to work, school or college

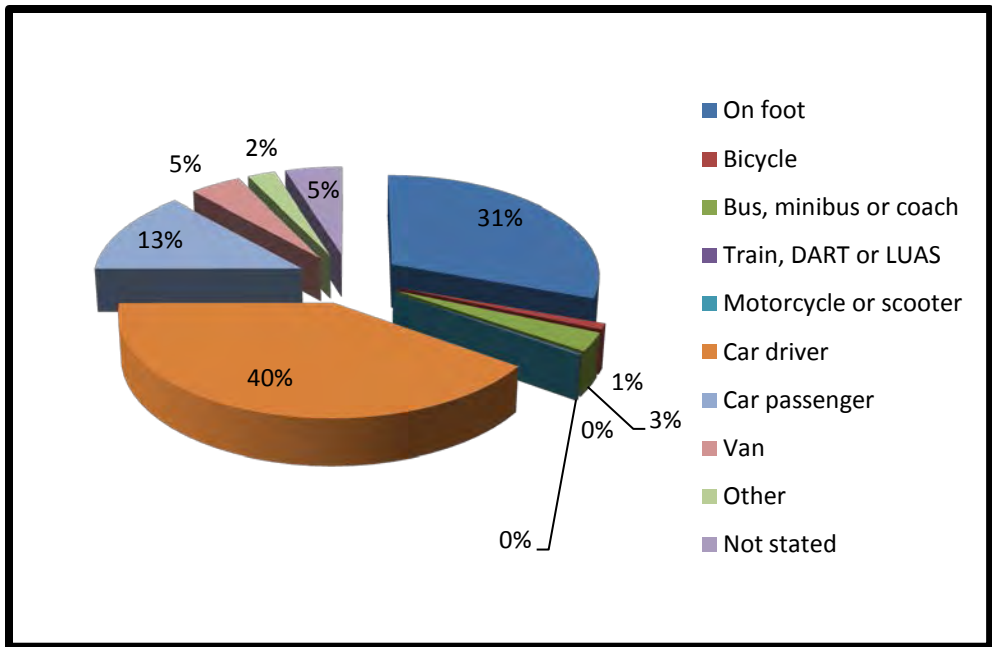


Figure 3.7 Population aged 5 years and over by means of travel to work, school or college

Figure 3.8 illustrates that 59% of the population aged 5 years and over, take under 15 minutes to get to their place of work, school or college. In contrast, only 2% take over hour and half to get to their destination.

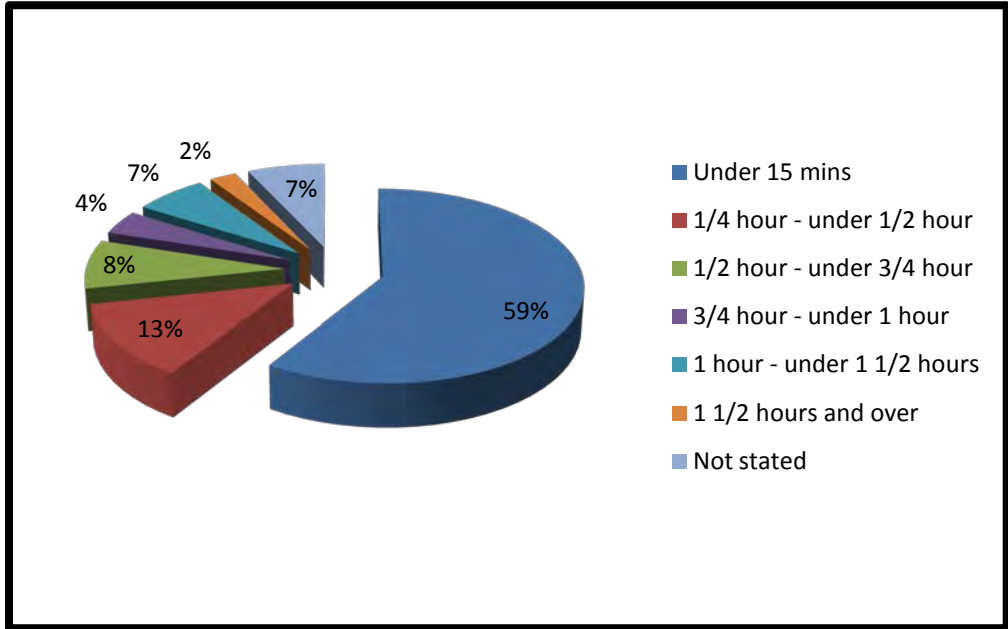


Figure 3.8 Population aged 5 years and over by journey time to work, school or college

3.5.5 Housing Composition

According to the census there was approximately 580 private households occupied/or usually occupied in Portumna with 92.3 per cent of households living in houses or bungalows while a further 7.7 percent lived in apartments, flats or bedsits. There were approximately 313 dwellings owner occupied, while 237 dwellings were rented. As indicated on figure 3.9 there was approximately 27% of single person households and there was 31% of households with two adults and children.

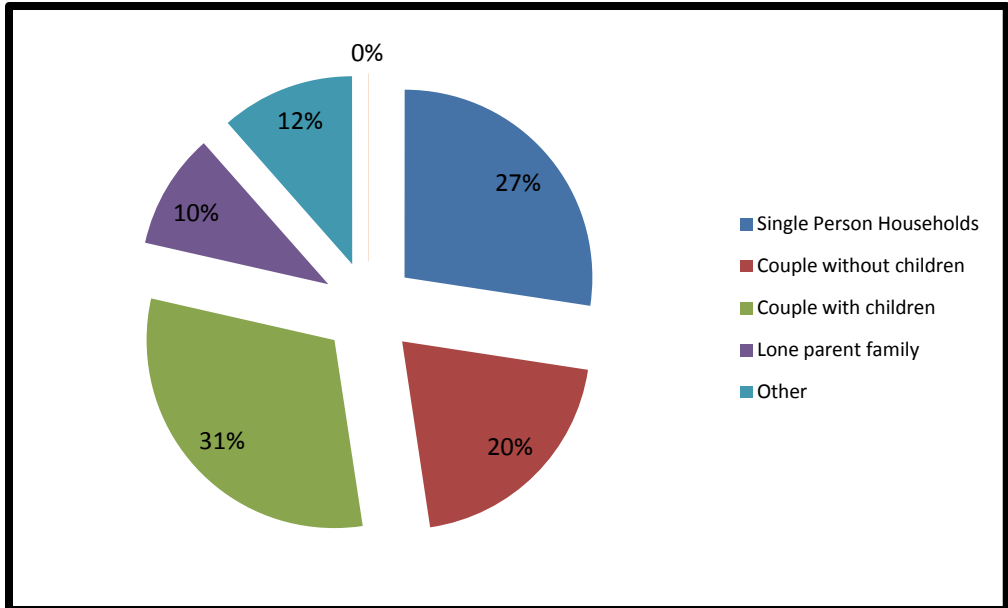


Figure 3.9 Housing Composition

3.5.6 Employment and Economy

There were approximately 582 persons at work within the Portumna area which equates to 48% of the population aged 15 years and over. From the figure 3.10 below there was approximately 174 persons who were unemployed or had given up their previous job. There were approximately 85 persons attending school/college. The main form of industry in the Portumna area for males was in the manufacturing industry which stood at 50% and for females was in the professional services which stood at 38%. There were approximately 5% of males in the construction industry which was an indication of the economic climate at the time of the 2011 census.

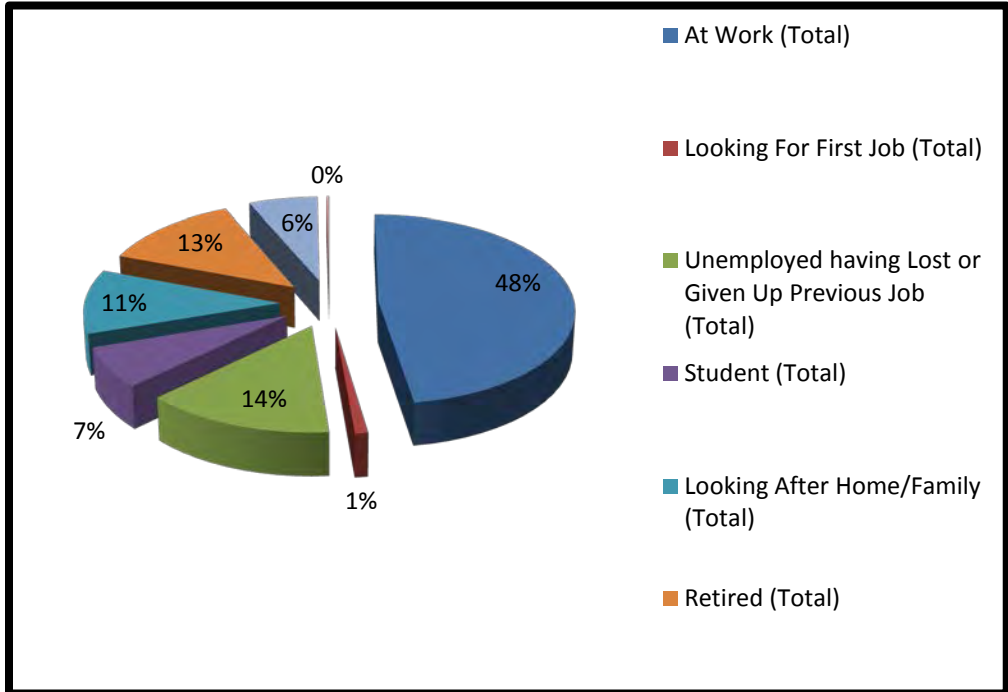


Figure 3.10 Population aged 15 years and over by principal economic status and sex

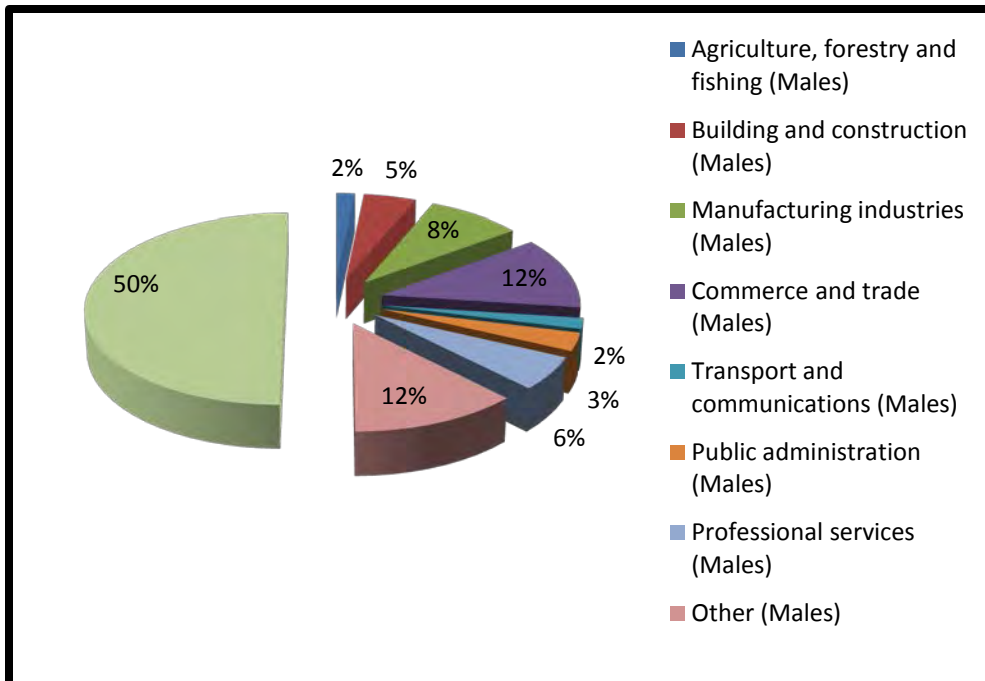


Figure 3.11 Persons at work by industry and sex (males)

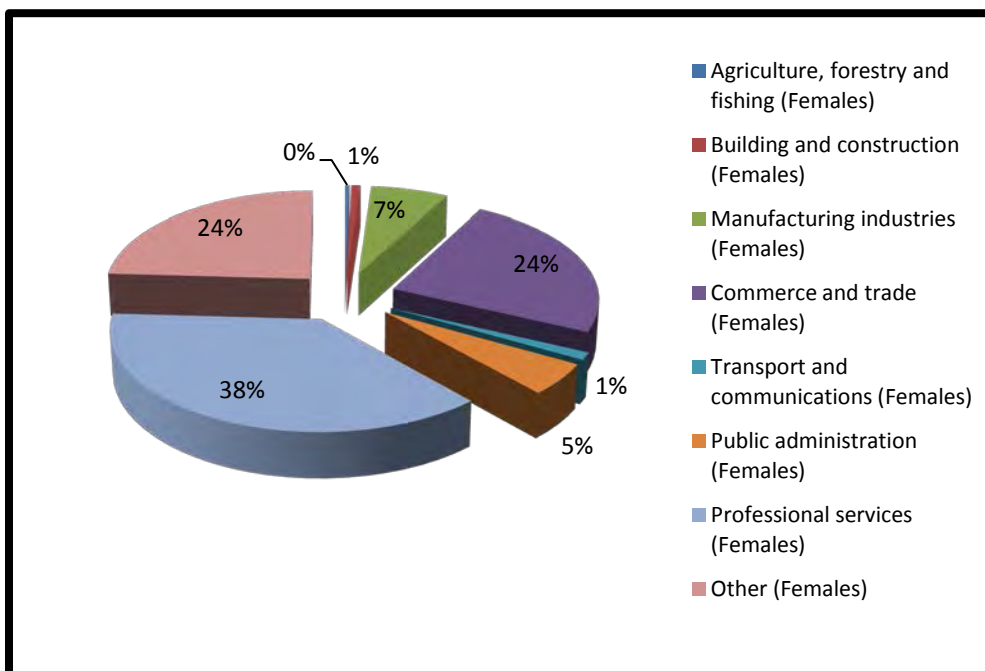


Figure 3.12 Persons at work by industry and sex (Females)

3.5.7 Human Health and Quality of Life

The cumulative effects of population change can impact on human health and the quality of life. Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil) through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings. Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses, for example. These factors have been considered with regard to the description of the baseline of

each environmental component and the identification and evaluation of the likely significant environmental effects of implementing the plan and the alternatives.

3.5.8 Existing Problems

- Certain environmental vectors within the plan area - such as air, water or soil - have the potential to transport and deposit contaminants or pollutants, which have the potential to cause harm and adversely impact upon the health of the area's population;
- The occurrence of severe rainfall events - and changes in the occurrence and magnitude of these events as a result of climate change - have the potential to cause flooding which would be likely to result in a hazard to human health and damage and loss to the built environment, infrastructure and biodiversity;
- Traffic hotspots located along the main road routes especially at intersections are likely to have sensory environments that are relatively more stressful due to air pollution and noise levels.

3.5.9 Evolution of Population and Human Health in the absence of a Local Area Plan

The County Development Plan Core Strategy has identified a target population growth for Portumna. In order to properly plan for the sustainable development of the plan area, it is essential that this is done at a local level in the form of a local area plan.

In the absence of a Local Area Plan there would be no framework directing developments to appropriate locations and this would have the potential to result in adverse impacts upon environmental components which would negatively affect human health.

3.5.10 Inter-relationship with Other Environmental Parameters

Issues relating to population, human health and quality of life are inter-related with all of the environmental parameters.

	B	SG	W	AC	M	CH	L
Population, Human Health	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.6. Soil and Geology

Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action. Soils are offered protection through the proposed EU Directive 2004/35/EC of the European Parliament and of the Council through establishing a framework for the protection of soil and amending Directive 2004/ 35/EC. Whilst this Directive has not been established into law and therefore not established into national legislation, Article 5 of the proposed Directive states that “for the purposes of preserving the various functions of soil, sealing, the development of artificial surfaces on top of soil resources should be limited”. The Directive indicates that this may be achieved through the rehabilitation of brown field sites, thus, reducing the pressure on development of green field site. It also states that soil should be used in a sustainable manner in order to ensure that it is available for future generations to come.

3.6.1 Soil Types

Figure 3.13 shows the distribution of soil types across the plan area. The biodiversity, flora and fauna outlined in Section 3.4 are facilitated by these soils. Urban soil underlies the built-up areas within the town. The majority of the plan area is covered by limestone till. Made ground dominates the centre of the plan area, the remainder of the plan area is comprised of lake sediment, alluvial soils and water bodies along the southern and eastern boundary perimeter.

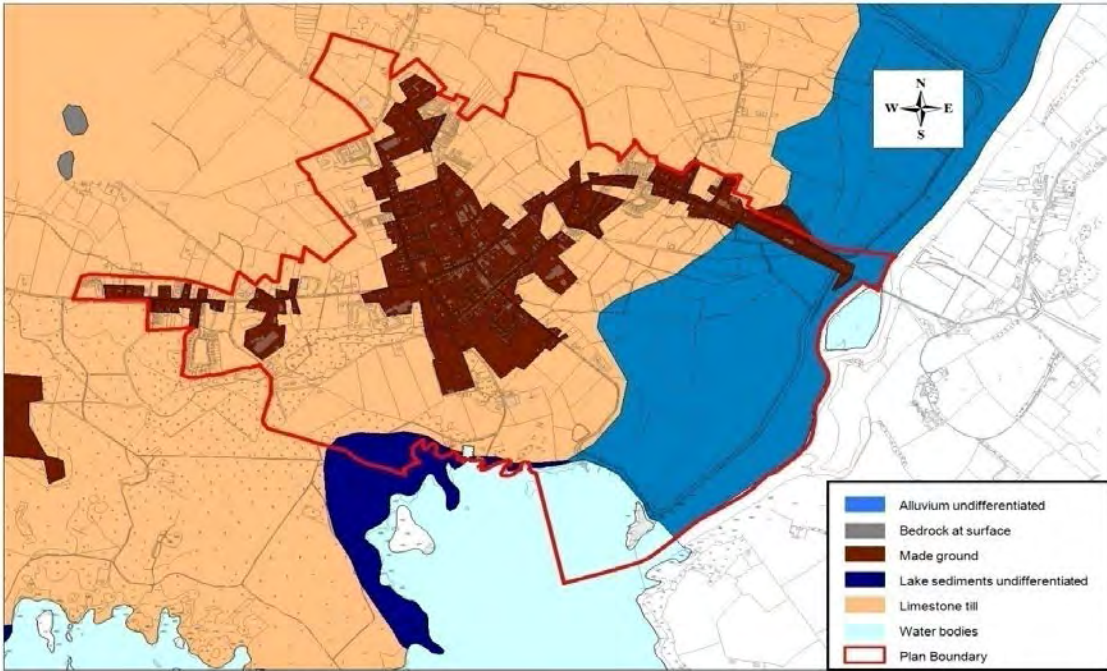


Figure 3.13 Soil Types (Source GCC)

3.6.2 Geology and Sites of Geological Interest

The soils and habitats of Portumna have been influenced by the areas underlying geology (See Figure 3.14). The majority of the plan area is underlain by Lucan Formation (Calp Limestone). Slevior Formation (Dinantian Limestone) makes up the remainder of the geology, occurring in the west of the plan area.

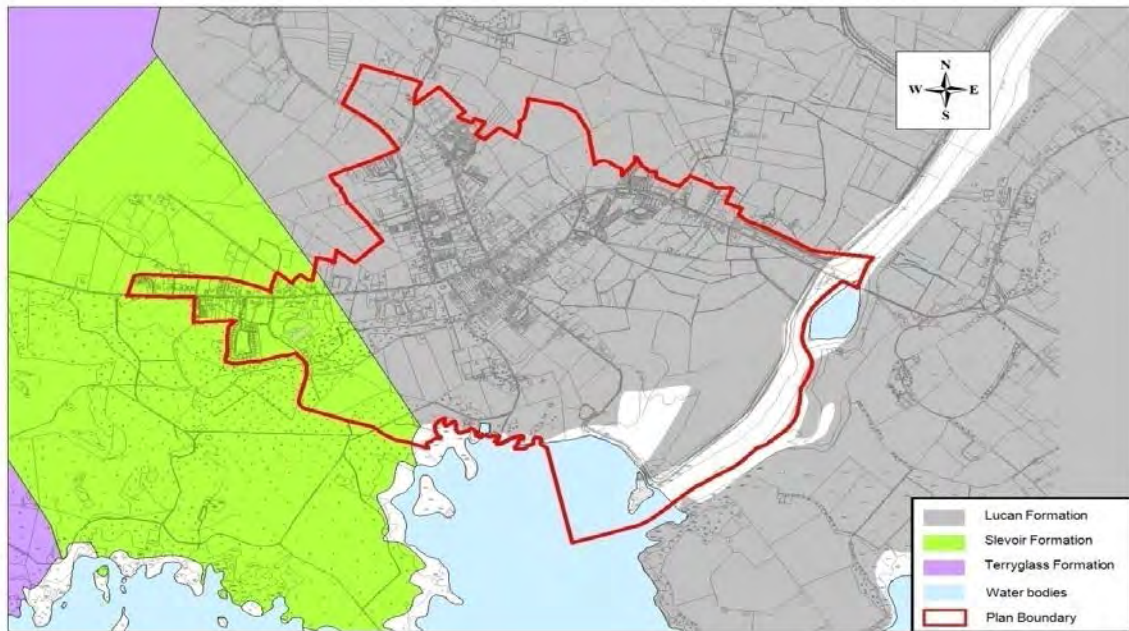


Figure 3.14 Geology. (Source GCC).

3.6.3 Existing Problems

- Greenfield development involves the building upon and thereby sealing of soil, thus representing an environmental problem;
- Soil has the potential to be polluted and contaminated as a result of pollution from development which is not serviced by appropriate waste water infrastructure and from agricultural sources;
- Soil erosion due mainly to surface erosion resulting from construction works and agricultural/forestry operations has the potential to impact on water quality. In addition to water quality, these can impact on infrastructure and can have health and safety implications.

3.6.4 Evolution of Soil and Geology in the absence of a Local Area Plan

In the absence of a Local Area Plan there would be no framework for future development or protection of the soil and geology within the environment of the town. There would be no framework for the provision of infrastructure, such as those relating to waste water treatment to serve existing and future development, therefore, soil would have the potential to be polluted and contaminated as a result of development which is not serviced appropriately by adequate waste water infrastructure. A key objective to rehabilitate brown field and derelict sites as opposed to developing greenfield sites may not be achieved which will result in potential subsequent impacts not only on soil quality, but on biodiversity, groundwater quality and water supply and consequently potential impacts on public health.

3.6.5 Inter-relationships with Other Environmental Parameters

The environmental parameters of soil and geology have a strong inter-relationship with all of the other parameters especially biodiversity, flora and fauna, population and human health and material assets.

	B	PHH	W	AC	M	CH	L
Soil & Geology	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.7 Water

The water resources of the region comprise surface waters including rivers, lakes and ground water. These resources are utilised for a wide range of uses including potable water, industry, amenity, agriculture and in the substance of ecosystems. Water within and surrounding Portumna has many functions; it provides drinking water to the area's population; it sustains biodiversity and flora and fauna; and it is also an integral part of the landscape.

3.7.1 Potential Pressures on Water Quality

Human activities, if not properly managed, can cause deterioration in water quality. Pressures exerted by human activities include the following:

- Sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants;
- Discharges arising from diffuse or dispersed activities on land;
- Abstractions from waters; and
- Structural alterations to water bodies.

3.7.2 The Water Framework Directive (WFD)

The WFD requires all member states implementing the necessary measures to prevent deterioration of the status of all water's surface, ground estuarine and coastal and to protect enhance and restore all waters with the aim of achieving good status by 2015. For the purpose of implementing the WFD, Ireland has been divided into eight river basin districts. The plan area is located in the Shannon International River Basin District (SIRBD) and as such much information regarding the environmental baseline is derived from

the Shannon International River Basin Management Plan (SIRBMP). Portumna is located within the Lough Derg Water Management Unit of the Shannon International River Basin Management Plan. The implementation of the Shannon International River Basin Management Plan will bring incremental improvement leading to the majority of waters reaching at least “good status” at the latest by 2027. The current plan will be reviewed and revised plan will issue covering the period 2016-2021. The River Shannon and Lough Derg have been listed on the Register of Protected Areas (RPA) for Water Dependant Habitats and Species, Nutrient sensitive area, Bathing Waters and Drinking water purposes. This Register includes habitats that are dependent on water: this includes areas already listed by the National Parks and Wildlife Service (NPWS) as Special Protection Areas for the protection of birds, as per the EU Birds Directive (79/409/EEC). In Ireland, waters intended for human consumption are protected under the Drinking Water Regulations (S.I. 439/2000 SI 278 Of 2007). All groundwater underlying the plan area is included on the Register of Protected Areas as outlined in the map overleaf.

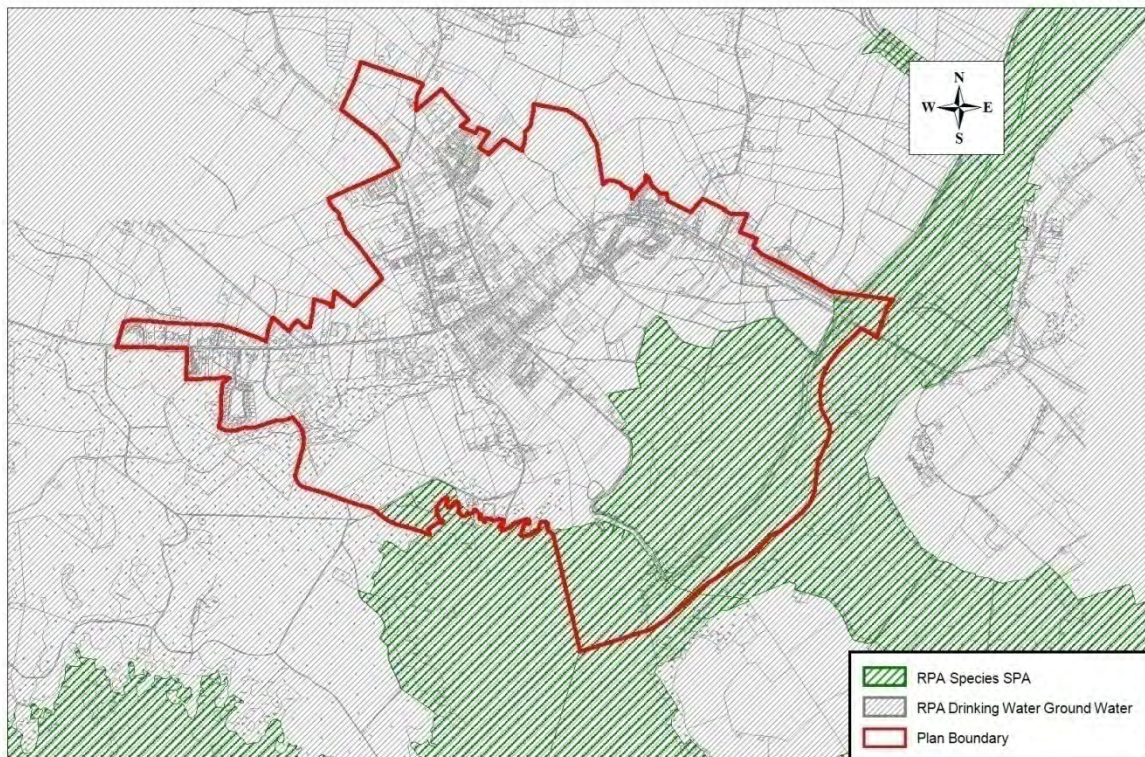


Figure 3.15 WFD Register of Protected Areas. (Source GCC).

3.7.3 Rivers

River water quality within the county is monitored by the EPA at a number of locations. Good status as defined by the WFD equates to approximately Q4 in the national biological classification scheme of rivers as set out by the EPA. Monitoring locations are generally of a *high* or *good* status in the west of the county while monitoring locations in the east of the county are a mixture of *high*, *good*, *moderate* and *poor* status. Rivers flowing through or adjacent to the plan area are mapped in Figure 3.16.

- The River Shannon originates in the Cuilcagh Mountains, in Counties Cavan and Fermanagh, and runs south through Galway to meet the sea adjacent to the Dingle Peninsula in north Kerry. As the river reaches Portumna it merges into Lough Derg which is the largest lake along its course. The river is in the middle stages of its journey as it passes through the town;
- The Deerpark River flows through Portumna Demesne and enters Lough Derg in the south west of the plan area.

There are also a number of streams that enter Lough Derg within the plan area:

- The Lickmolassy stream and Deerpark/Portumna stream converge in the west of the plan area;
- The Gortyneill stream enters the River Shannon to the south east of the plan area.

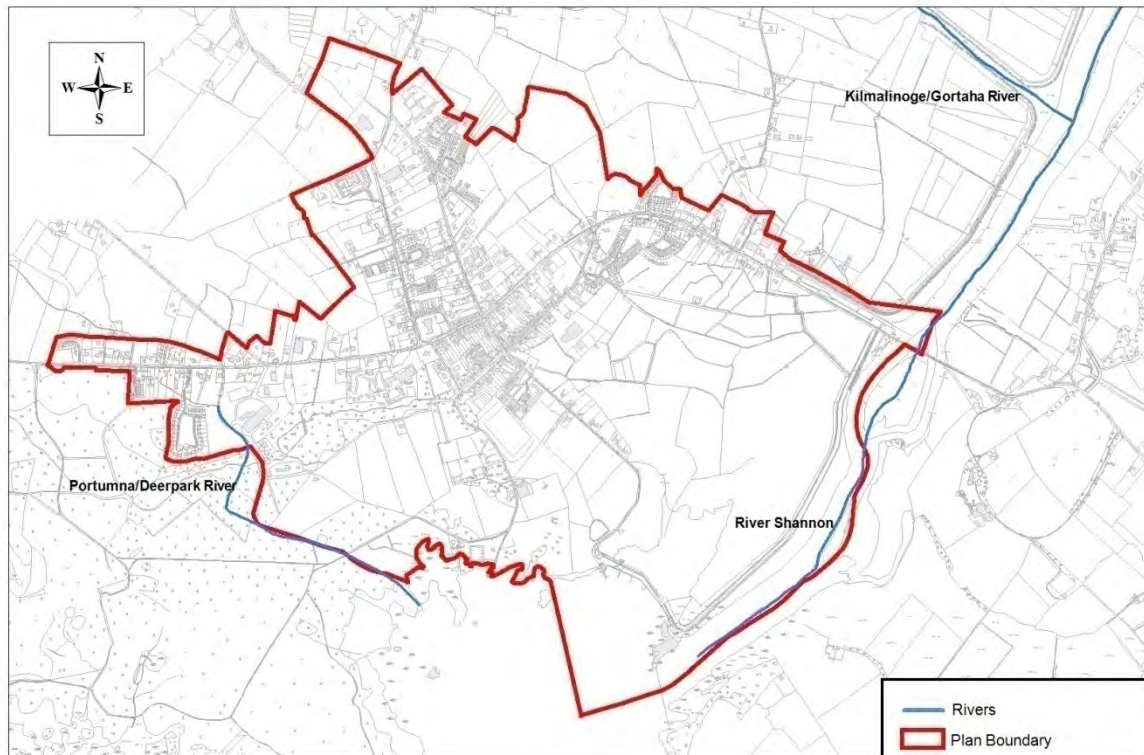


Figure 3.16 Rivers within plan area. (Source GCC).

The most recent river water body quality data¹³ identifies the following:

- The Shannon, Tributary of Shannon Lower ((IE_SH_25_3904 & IE_SH_25_655) are classified as being of Moderate Status;
- Lough Derg(IE_SH_25_191A) is classified as being of Poor Status;
- The Portumna, Tributary of the Shannon Lower (IE_SH_25_2616) is classified as Poor Status.

These values are mapped on Figure 3.17 as shown overleaf.

¹³ WFD RBMP Implementation Plan 2011

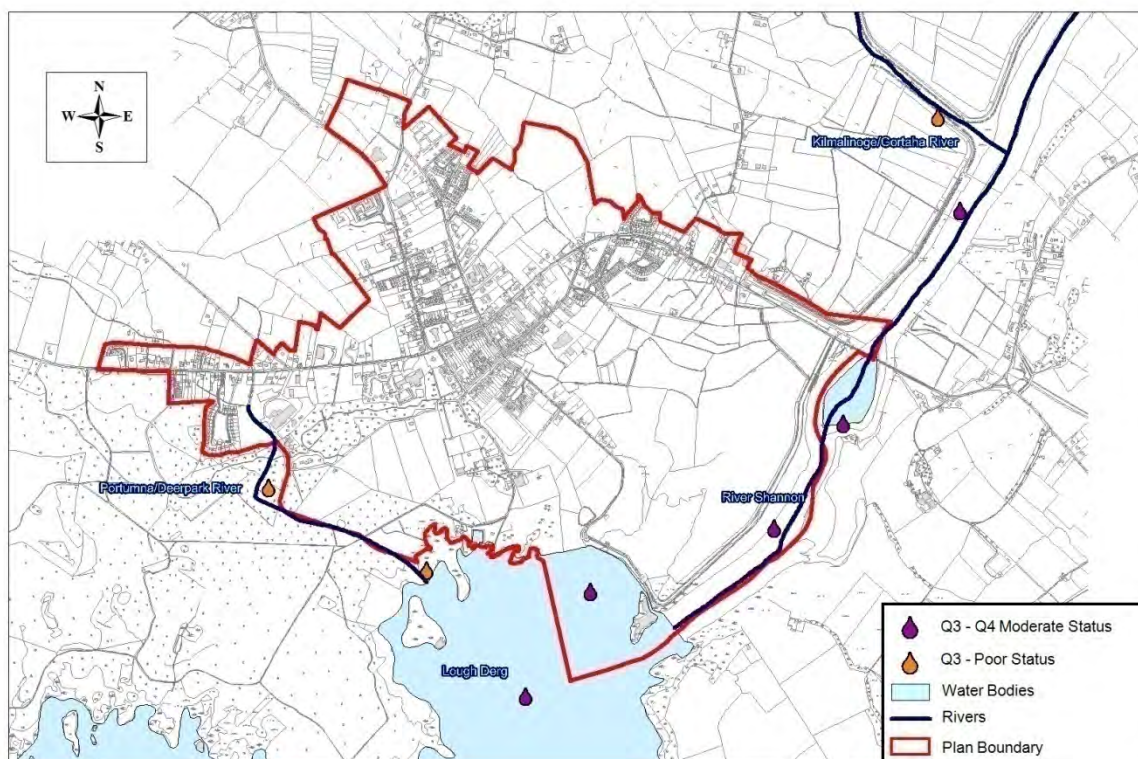


Figure 3.17 Water Quality of Rivers (Q Values). (Source EPA, SRBD, GCC).

The following is a brief summary of the river water-body status as outlined within the Water Framework Directive (WFD):

1. Shannon, Tributary of Shannon Lower (IE_SH_25_3904_1)

According to the Water Framework Directive - Report data based upon final RBMP 2009-2015 the river water-body had an overall status of 'moderate'. The river water-body was 'at risk' (1a) of not achieving good ecological or good chemical status/potential at least by 2015. The overall WFD objective is to restore this water body to good status by 2021.

2. Shannon, Tributary of Shannon Lower (IE_SH_26_3977)

According to the Water Framework Directive - Report data based upon final RBMP 2009-2015 the river water-body had an overall status of 'moderate'. The river water-body was 'probably at risk' (1b) achieving good ecological or good chemical status/potential at least by 2015 not at risk' (2b). The overall WFD objective is to restore this water body to good status by 2015.

3. Portumna, Tributary of Shannon Lower (IE_SH_25_2616)

According to the Water Framework Directive - Report data based upon final RBMP 2009-2015 the river water-body had an overall status of 'poor'. The river water-body was at risk (1a) of not achieving good ecological or good chemical status/potential at least by 2015. The overall WFD objective is to restore this water body to good status by 2021.

Figure 3.18 illustrates the current risk assessment for Rivers in Portumna Plan area.

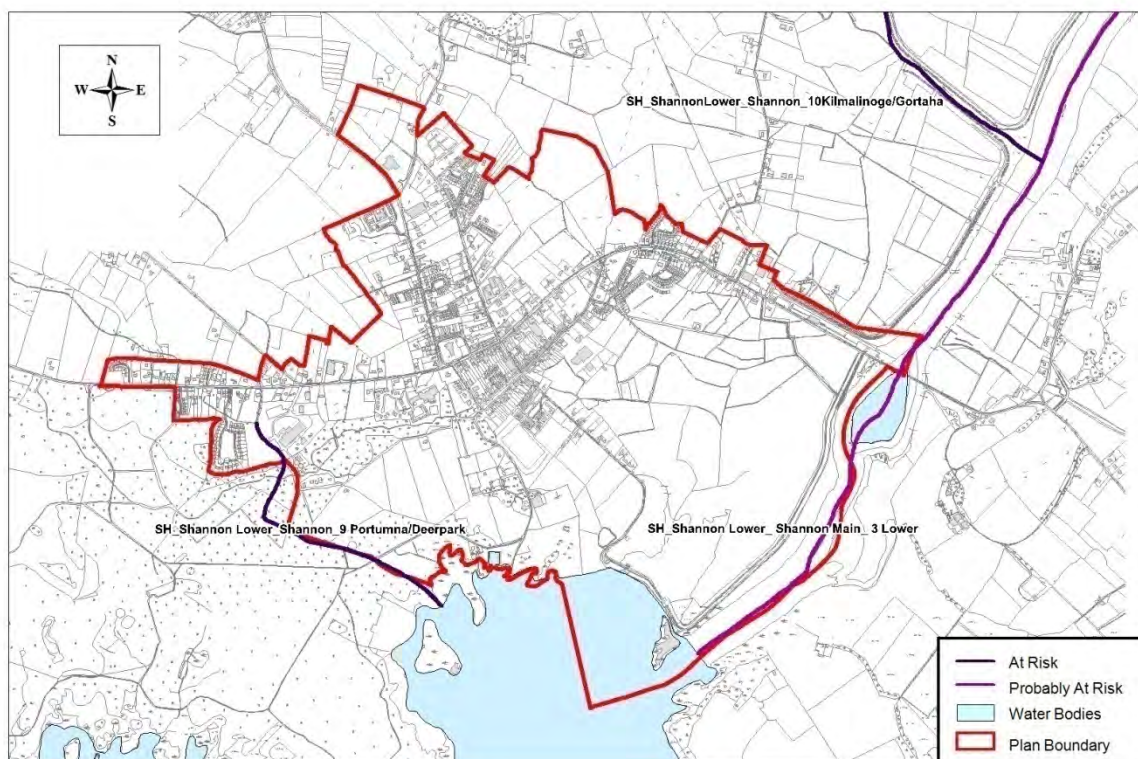


Figure 3.18 Risk Assessments of Rivers. (Source WFD).

3.7.4 Ground Waters

Groundwater is defined as the water stored underground in formations of saturated rock, sand, gravel and soils. The protection of groundwater from human activity is crucial as the resource is highly susceptible to contamination with long term consequences for humans and the environment. The main groundwater water-body in the plan area is – The Tynagh (IE_SH_G_236). According to the Water Framework Directive the ground water-body is at risk (1a) of not achieving good status by 2015. The overall WFD objective is to protect this ground water –body. Figure 3.19 illustrates the ground water body in the plan area and Figure 3.20 illustrates the current risk assessment for groundwater in the Portumna area.

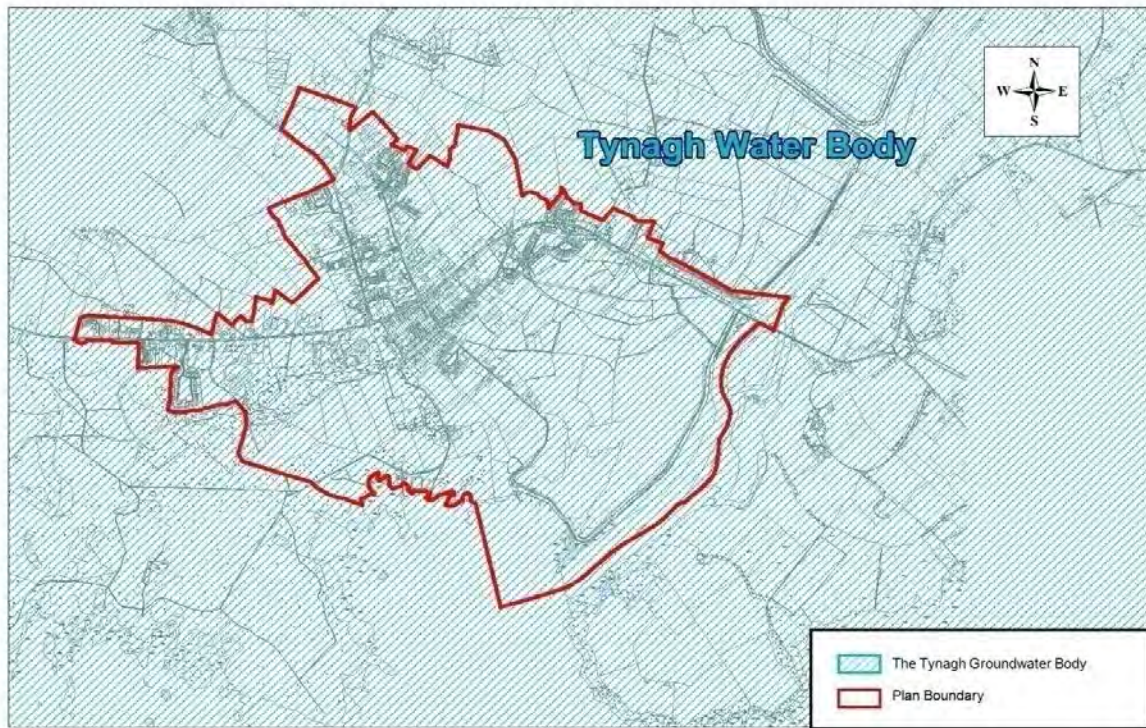


Figure 3.19 Groundwater Bodies in the plan area. (Source EPA).

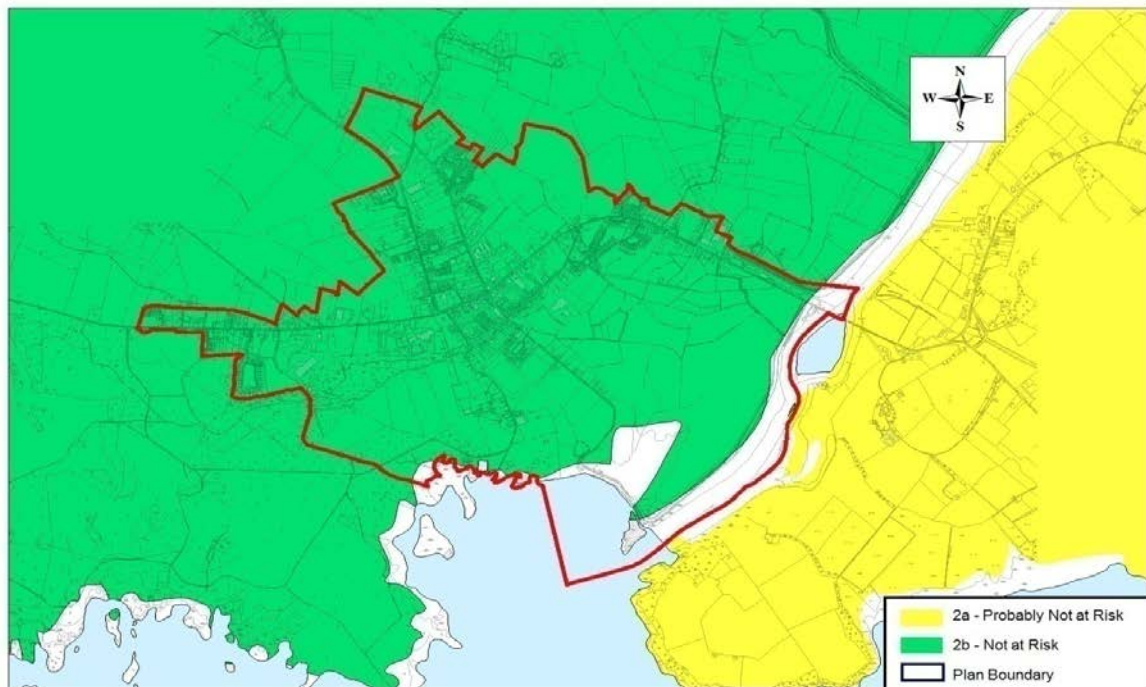


Figure 3.20 Risk Assessment of Groundwater. (Source EPA, GCC).

3.7.4.1 Groundwater Vulnerability

The Geological Survey of Ireland (GSI) rates aquifers according to their vulnerability to pollution. Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Figure 3.21 shows that in general high to moderate vulnerability is most applicable to the plan area. There are only small sections of extreme vulnerability with rock near surface and a linear strip of extreme vulnerability.

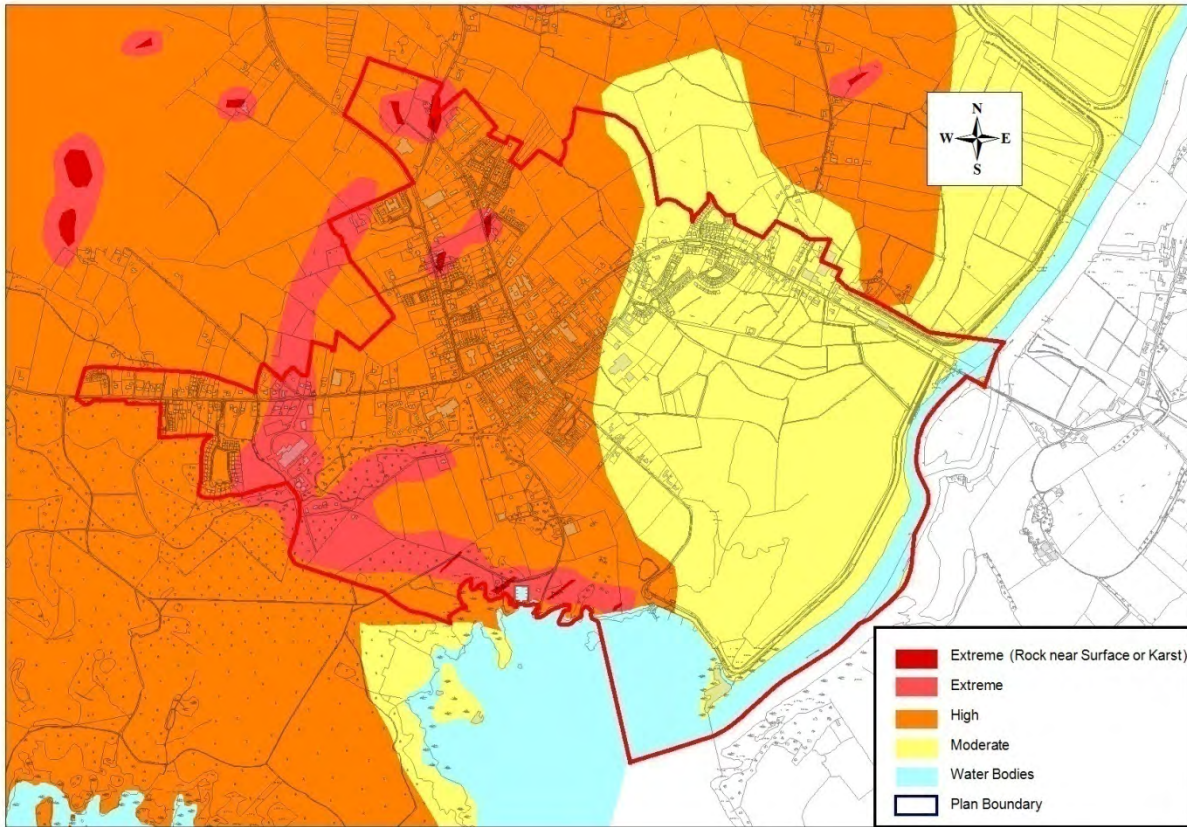


Figure 3.21 GSI Groundwater Vulnerability. (Source GSI website).

3.7.4.2 Groundwater Productivity

The GSI rates aquifers based on the hydro-geological characteristics and on the value of the groundwater resource. The plan area is underlain and characterised by a locally important karstified aquifer and which is generally moderately productive only in local zones as seen on Figure 3.22.

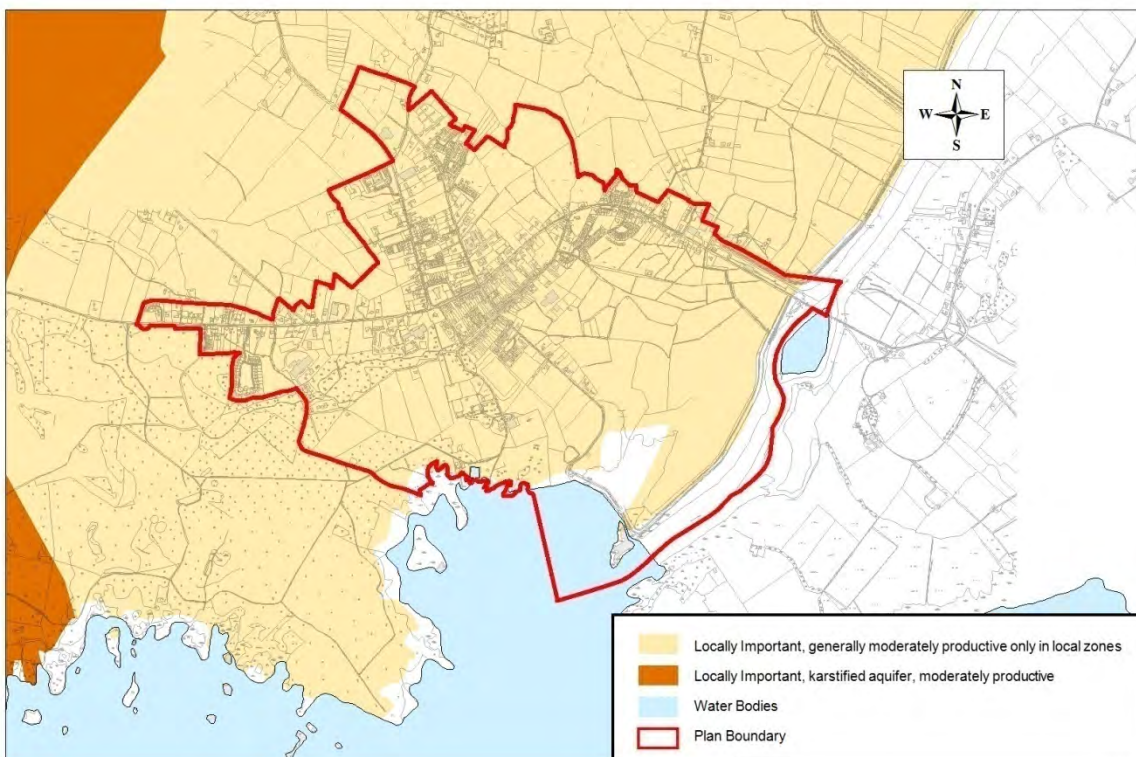


Figure 3.22 Groundwater Productivity. (Source EPA, GCC and GSI).

3.7.5 Flooding

Flooding is a natural environmental phenomenon. Floods are usually caused by a combination of events including overflowing river banks, coastal storms or blocked or overloaded drainage ditches. As well as causing economic, social and ecological impacts, floods in certain circumstances pose a risk to human health. Portumna is vulnerable to adverse effects from changes in the occurrence of severe rainfall events and associated flooding of the local rivers.

The Department of the Environment Heritage and Local Government and the Office of Public Works (OPW) published national flood risk management guidelines entitled *The Planning System and Flood Risk Management: Guidelines for Planning Authorities 2009* and the associated Circular PL2/2014. These Guidelines and associated circular require Planning Authorities to ensure that, where relevant, flood risk is a key consideration in preparing development plans, local area plans and the assessment of planning applications. The aim of the guidelines is to avoid flood risk where possible, substitute less vulnerable uses when avoidance is not possible and mitigate and manage the risk where avoidance and substitution are not possible.

The OPW has produced flood maps as part of the Draft Preliminary Flood Risk Assessment (PFRA) that identify areas at risk of flooding, including fluvial, coastal, pluvial and groundwater flooding. More accurate maps for each Area for Further Assessment (AFA) will be produced for areas of potentially significant risk under a programme of Western and Shannon Catchment Flood Risk Assessment and Management Studies (CFRAMS). However, due to the delay in publishing the final CFRAM maps, the Planning Authority has carried out a Stage 2 Strategic Flood Risk Assessment (SFRA), which forms part of the preparation of the plan. The flood zones identified within the *Portumna Local Area Plan 2016-2022* was derived from a number of sources which helped prepare the Stage 2 Flood Risk Assessment. Undeveloped land within Flood Zone A and Flood Zone B have been zoned as Open Space, Recreation

and Amenity as outlined within the Land Use Zoning Maps 1A/1B of the *Portumna Local Area Plan* and as shown in figure 3.23, thus avoiding incompatible uses and directing inappropriate development away from these zones. Such development would be assessed in accordance with the Planning System and Flood Risk Management Guidelines 2009. Circular PL2/2014 was published in August 2014 and specifically relates to flooding in areas that are developed. There are a number of existing developments that lie within Flood Zone A and Flood Zone B, a Constrained Land Use Zoning has been applied to these areas which seeks to facilitate the appropriate development of existing buildings while ensuring protection against flood risk.

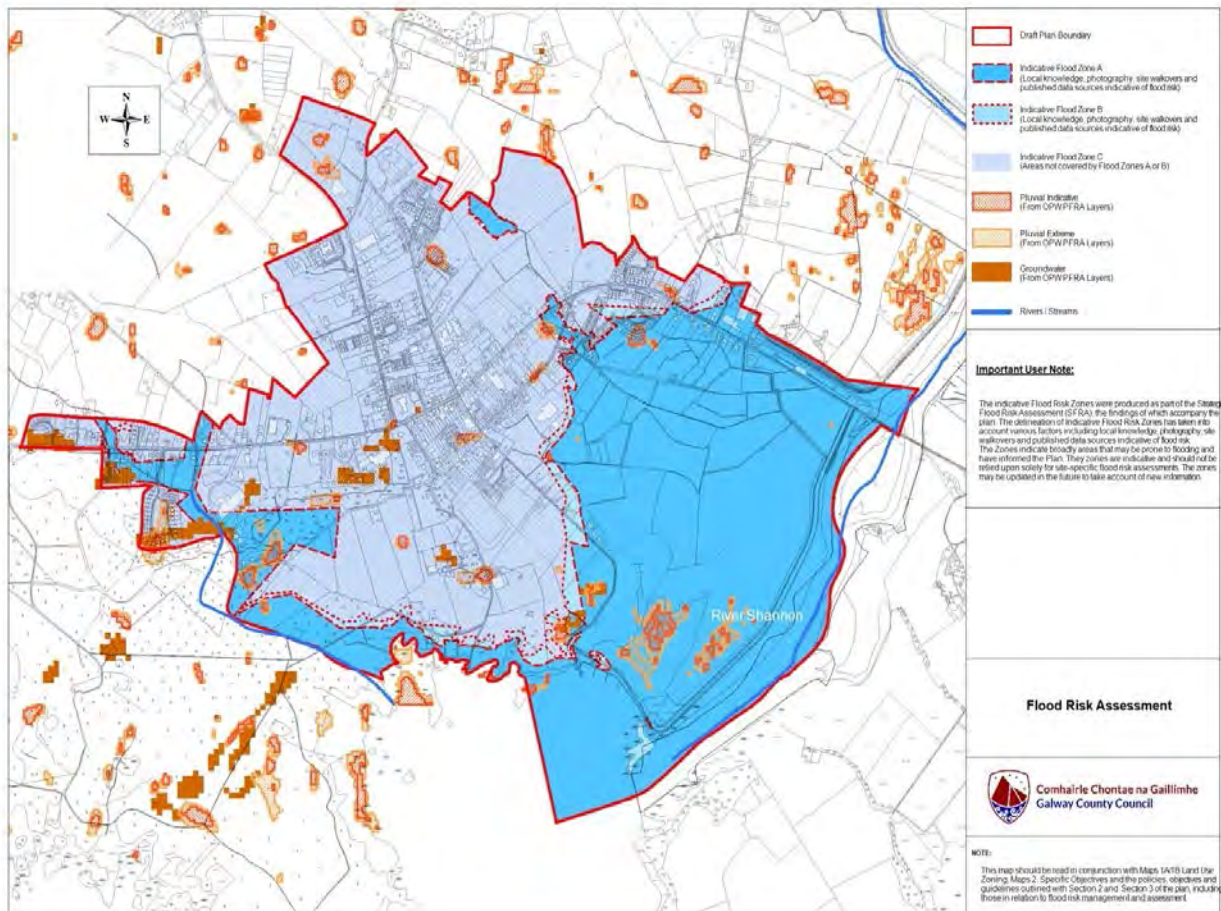


Figure 3.23 Flood Risk Assessments (Source GCC).

3.7.6 Existing Problems

The above descriptions identify a number of sensitivities with regard to the status of water bodies within the Portumna plan area.

- The majority of surface waters are at significant risk of failing to achieve the WFD's objectives of good status by 2015;
- The pressures which have been identified by the SIRBD in the characterisation of the water bodies within and surrounding the plan area include:
 - Diffuse source pressures such as the EPA's diffuse sources model;
 - Morphological pressures including intensive land use; and
 - Point sources such as combined sewer and treatment plant overflows and waste water treatment plants.
- Potential increase in the levels of flooding within the plan area.

3.7.7 Evolution of Water in the absence of a Local Area Plan

The replacing of semi-natural land cover types with artificial, more impervious surfaces is likely to lead to cumulative increases in the run-off and peak flow conditions in the local river bodies. These cumulative increases may have the potential to, especially in combination with the occurrence of severe rainfall events, result in flooding. Uncoordinated development in the absence of a local area plan could lead to the contamination of groundwater.

Significant adverse impacts upon the biodiversity and flora and fauna of the area could potentially arise.

3.7.8 Inter-relationships with Other Environmental Parameters

The environmental parameter water has a strong inter-relationship with all of the other parameters especially biodiversity, flora and fauna, population and human health and material assets. It is essential that a clean and sufficient water supply is provided for the general population of the area.

	B	PHH	SG	AC	M	CH	L
Water	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.8 Air and Climatic Factors

3.8.1 Ambient Air Quality

An updated and integrated approach to monitoring, assessment and management of air quality within the European Union was introduced through the Clean Air for Europe Directive, (CAFE, 2008/50/EC) on the 21st May 2008. The Directive replaced the pre-existing Air Quality Framework Directive (96/62/EC, 2nd September 1996) and three of the four preceding Air Quality Framework Daughter Directives. It came into effect as of June 2010. The EU *Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC)* was transposed into Irish legislation by the *Air Quality Standards Regulations 2011 (SI No. 180 of 2011)*. The basic principle of the CAFE Directive is that each country should be divided into zones and that the monitoring assessment management and reporting of air quality will be undertaken in relation to these zones.

3.8.2 Air Zones

In order to comply with the directives mentioned above, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2011 (SI No. 280 of 2011).

The main areas defined in each zone are:

Zone A: Dublin;

Zone B: Cork;

Zone C: Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise;

Zone D: Rural Ireland, i.e. the remainder of the State excluding Zones A, B and C.

Portumna falls into **Zone D**. The current air quality in the Portumna Urban AQIH Region is 1 – Good. Currently there is no air quality monitoring sites in Portumna. The nearest continuous/real time data air quality monitoring point to Portumna is located at Bodkin Roundabout to the north of Galway City.

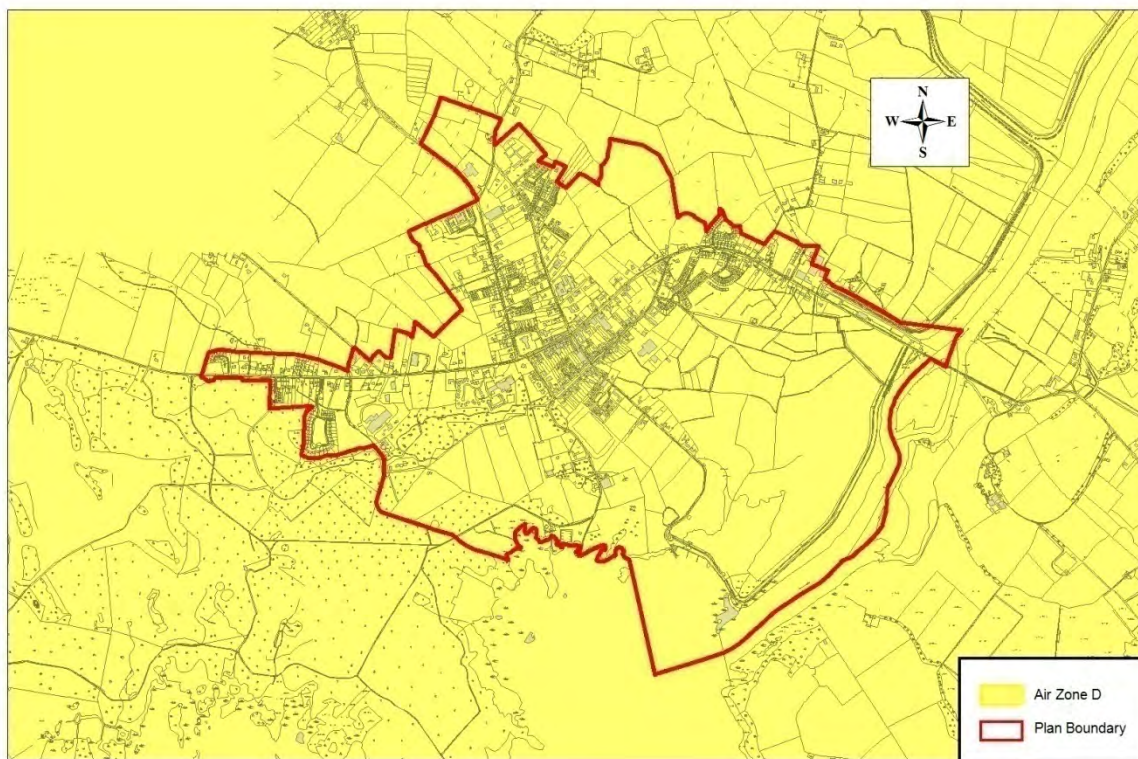


Figure 3.24 Air Zone with the plan area. (Source EPA).

3.8.3 Radon Gas

Radon is a naturally occurring radioactive and carcinogenic gas that originates from the decay of uranium in rocks and soils. Radon has no smell, colour or taste and can only be detected using special detectors. The Radon Protection Institute of Ireland (RPII) indicates that less than one per cent of the homes in the grid that encompasses Portumna are estimated to be above the threshold level. The RPII highlights the dangers of exposure to radon, including increased risk of lung cancer. The RPII website provides details with regard to assessing homes for the risk of radon (www.rpii.ie).

3.8.4 Noise

The EU Directive 2002/49/EC, transposed into Irish law under Statutory Instrument number 140 of 2006 (the Regulations', which calls for the development of strategic noise maps and action plans for major roads, railways, airports and cities. Under the regulations, the National Roads Authority is responsible for the development of noise maps for all national roads carrying in excess of 3 million vehicles a year.

The over-riding noise source in Portumna is from traffic. Traffic hotspots located along the N65 main road routes especially at intersections are likely to have sensory environments that are relatively more stressful due to air pollution and noise levels.

According to the National Secondary Road Needs Study, Network Options Report-West Region (March 2011), the N65 carries traffic of the order of 5,000 AADT (Annual Average Daily Traffic and therefore it does not surpass the aforementioned threshold).

3.8.5 Climatic Factors

3.8.5.1 Greenhouse Gases

In order to reduce greenhouse gas emissions the internationally agreed Kyoto Protocol established emissions reduction targets for developing countries. Ireland's emission target for greenhouse gases is to limit the increase in combined emissions during the five-year period 2008-2012 to 13 per cent above 1990 levels. Under the EU Commission's Climate and Energy Package, Ireland is required to deliver a 20% reduction in non-ETS greenhouse gas emissions by 2020 (relative to 2005 levels). In addition, Ireland also has binding annual emission limits for the period 2013-2020 to ensure a gradual move towards the 2020 target. The non-ETS sectors cover those that are outside the EU Emissions Trading Scheme and include the agriculture, transport, residential and waste sectors. The 'best case scenario' assumes that Government targets for 2020, for example renewable targets, will be fully achieved (With Additional Measures projection), under this scenario, emissions decrease by 3% by 2020 (Source: EPA document titled 'Ireland's Greenhouse Gas Emission Projections 2013-2030; published 28/05/2014).

3.8.5.2 Climate Change

A *National Climate Change Adaptation Framework* is already in place since 2012 and provides the policy context for a strategic national adaptation response to climate change. This policy includes mitigation and adaptation measures and the integration of climate change considerations in planning and delivering work programmes.

3.8.5.3 Existing Problems

- Traffic hotspots within the plan area are likely to have elevated levels of air pollution and noise due to traffic congestion;
- Localised air pollution incidences with regard to PM10 and PM2.5 and noise pollution are both likely to occur when demolition/construction takes place;
- The occurrence of severe rainfall events and changes in the occurrence and magnitude of these events as a result of climate change could have an impact on the Portumna area;
- The loss of habitats could present problems for species numbers and diversity especially in the European sites.

3.8.6 Evolution of Air and Climatic Factors in the absence of a Local Area Plan

In the absence of a Local Area Plan there would be no framework for the location of new development and, as a consequence development would be likely to occur in a piecemeal fashion, spread out across wider areas than otherwise maybe the case. This would result in significant increases in travel related emissions in the air.

While increases in the use of catalytic convertors, cleaner fuels, better engine technology and maintenance is generally reducing the pollution emitted per motor vehicle, this reduction is more than likely offset by the increases in the number of cars as well as the increase in the volume of incidences of traffic congestion. Increases in the number of cars as well as the increases in volume and increased traffic congestion may lead to increases in air and noise pollution in the future.

In the absence of a Local Area Plan the realisation of objectives relating to energy efficiency, renewable energy and a reduction in transport related emissions contained within the Local Area Plan would be made more difficult. If new development or an intensification of existing land uses were to occur in the plan area adverse impacts upon air quality and noise levels, and resultant impacts on human health, would likely arise if unmitigated.

3.8.7 Inter-relationships with Other Environmental Parameters

The environmental parameter air and climatic factors have a strong inter-relationship with all of the other environmental parameters. In order for the other environmental parameters to succeed it is essential that climate change and air quality is closely monitored and measures incorporated to reduce the impact of climate change on the local environment which has a direct effect on the quality of life of the local population. Reduction in greenhouse gases contributes to the air quality thus improving the quality of life of the general population of the area.

	B	PHH	SG	W	M	CH	L
Air & Climatic Factors	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.9 Material Assets

3.9.1 Categories of Material Assets

The material assets of Portumna may be broken down into a number of relevant categories including:

- Wastewater;
- Drinking water;
- Waste management;
- Transport infrastructure, telecommunication and energy infrastructure;

Irish Water is responsible for the operation of public water and wastewater services. In May 2014, Irish Water published the Proposed Capital Investment Plan 2014-2016 and will implement same in conjunction with the Water Services Section of Galway County Council in order to secure the provision of an adequate public water supply and wastewater infrastructure network within the county.

3.9.2 Waste Water Treatment Infrastructure

The Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC) aims to protect the environment from the adverse effects of wastewater discharges by ensuring that waste water is appropriately treated before it is discharged to the environment. Such treatment is essential in order to meet the requirements of the Water Framework Directive. The Waste Water Treatment Plant began operating in 2001 and currently treats effluent for a population equivalent (p.e) of 2,870 (2014) and an estimated (p.e) of 3,043 in 2020. Portumna WwTP was designed and constructed to cater for a design population of 3,100, providing secondary and nutrient treatment after which it discharges to Lough Derg. As outlined above, the current loading is 2,870 (2014) which indicates that the plant is significantly under loaded. It is considered that the extra loading that is generated during the peak tourist season can be accommodated within the existing capacity of the Waste Water Treatment System.

The European Union Directive on Urban Waste Water Treatment specifies monitoring requirements and sets waste water discharge limits for the water quality indicator parameters of biochemical oxygen demand (BOD), chemical oxygen demand (COD) and total suspended solids (TSS). The Portumna WwTP has been identified as having passed the requirements of the Urban Waste Water Treatment Regulations (Irish Water, 2015, *Portumna Waste Water Discharge License Application (D0196-01)*).

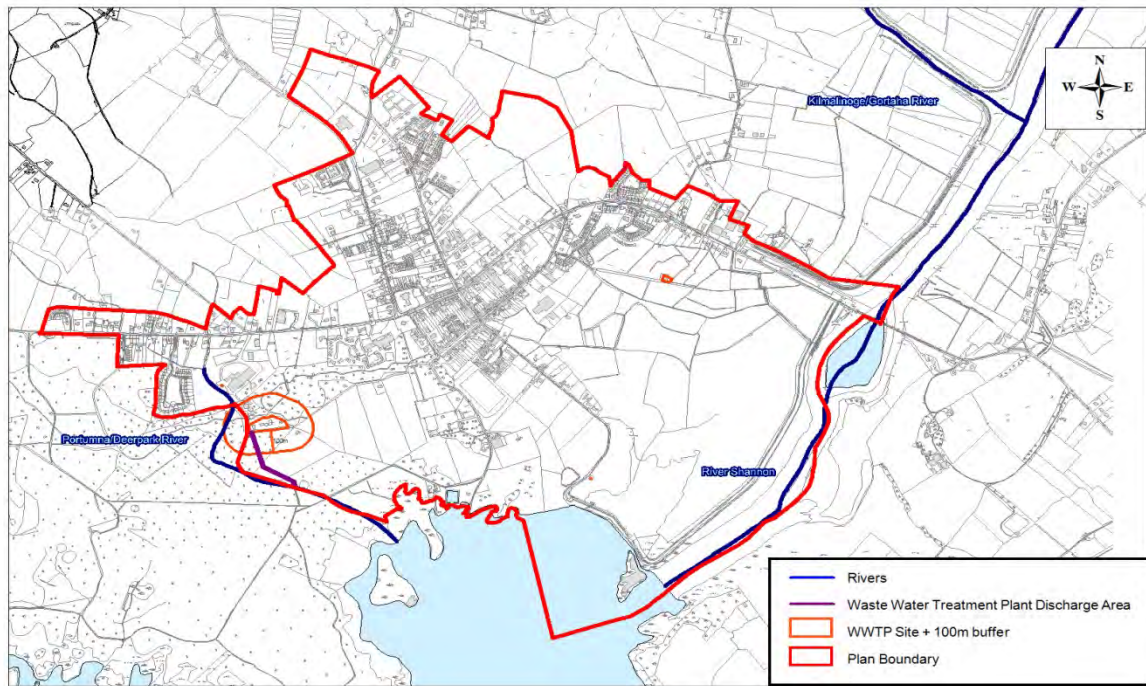


Figure 3.25 Public Wastewater Treatment Plant and Outfall. (Source GCC).

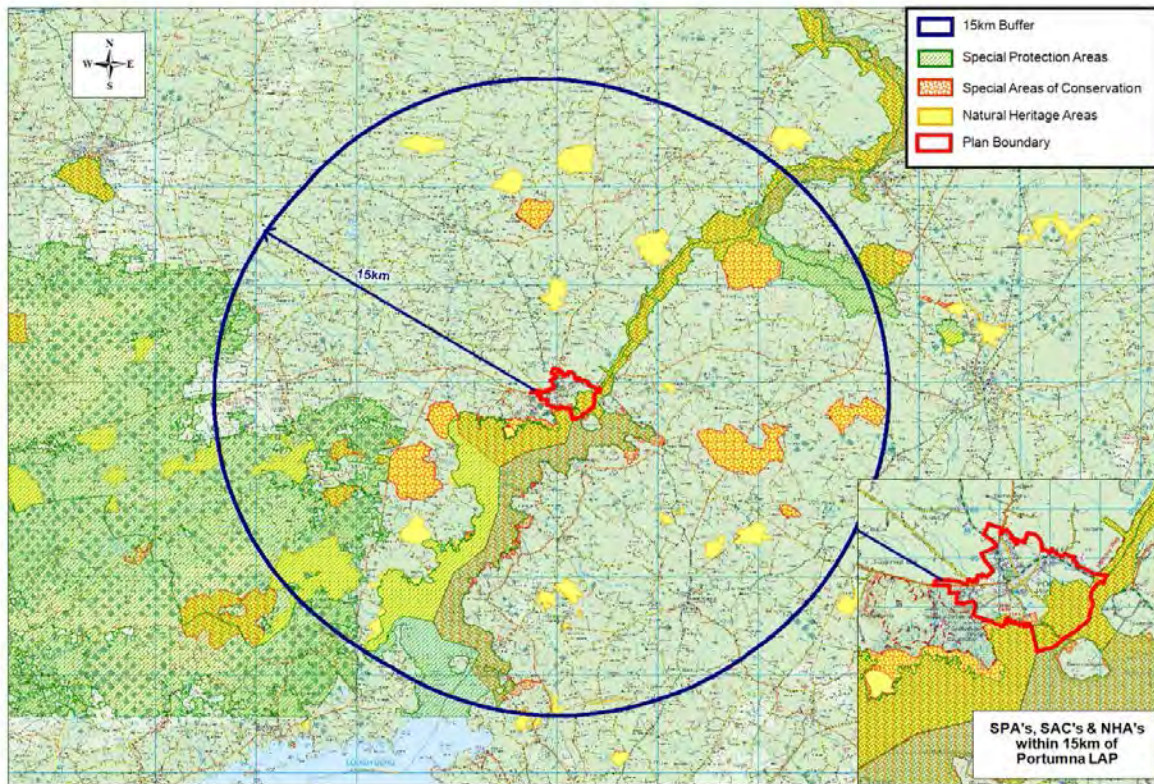


Figure 3.26 Public Wastewater treatment plant and European Sites within 15Km (Source GCC).

3.9.3 Sludge Management Plan

The Galway City Council & County Council Operational Sludge Management Plan was adopted in January, 2011. The objectives of the plan are to:

- Identify sources of sludge;
- Estimate rates for sludge production and final destinations for sludge;
- Recommend sustainable options for the management of non-hazardous sludge.

The provision of all new sewerage treatment plants will include works for dealing with any sludge arising from treatment, in accordance with the Sludge Management Plan.

3.9.4 Surface Water Drainage

There is no dedicated surface water sewer network serving Portumna. Under the Portumna Sewage Scheme 1991-2001, some separation took place from the combined surface and foul sewerage system. More segregation is required to reduce the quantity of storm water been received at the treatment plant especially a storm sewer on the R352 out from the town and along the Bridge Road/N65.

Developments within the plan area will be required to comply with the Sustainable Drainage System (SUDS) as contained within the EPA document entitled *Guidance on Authorisation of Discharges to Groundwater 2011* (or any updated /superseding document).

3.9.5 Drinking Water Supply, Capacity and Demand

The availability of a water supply of sufficient quality and quantity is essential for public health and the sustainable economic growth of Portumna town. Similarly water conservation is also essential to prevent the unnecessary loss of this precious resource. The primary source of Portumna's public water supply is from Lough Derg. The abstracted water is treated prior to consumption at the local treatment plant through processes of coagulation, filtration, chlorination and fluoridation. The reservoirs serving Portumna Town and the surrounding areas are located on site and at Gallas Hill. The water treatment plant is operating above design capacity. It is designed for 90m³/h but regularly exceeds 100m³/h.

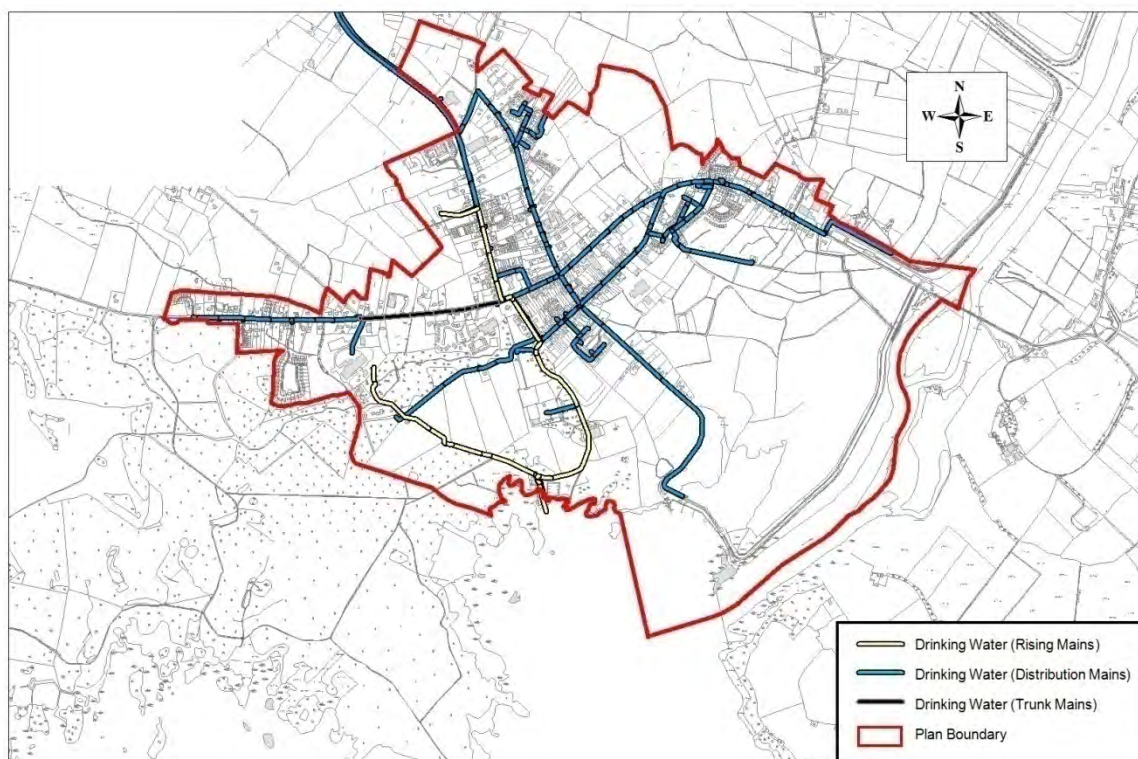


Figure 3.27 The Drinking Water Network within the plan area. (Source GCC).

3.9.6 Drinking Water Quality

The Portumna Water Supply regularly exceeds the recommended turbidity limit of 0.2NTU. There are episodes of pathogen outbreaks and therefore the addition of a UV reactor to the process is warranted. The Portumna drinking water supply is identified in the EPA remedial action list Q4 of 2014.

3.9.7 Waste Management

The Replacement Connaught Waste Management Plan 2006-2011 provides policy guidance on waste management in County Galway. Best practice in terms of waste management recommends that as much waste as possible is dealt with through reduction, reuse and recycling, with as little as possible remaining to be disposed of to landfill.

A segregated waste collection services for dry recyclables and landfill waste is currently provided in Portumna area by a private operator for domestic and commercial waste. A brink bank facility is provided for the collection of glass.

3.9.8 Transport

In the *Galway County Development Plan 2015-2021*, Portumna has been identified as a Key Town. One of the strategic aims within the planning area is a move towards a more sustainable and integrated concept of development with regard to land use, transportation, water services and energy supply. The spatial/settlement strategy focused development in Tuam Hub Town and key towns and villages along strategic development corridors emerging along the main transportation infrastructure nodes as recommended in the *Galway Transportation and Planning Study (GTPS 1999, 2003)*.

3.9.8.1 Vehicular Circulation

A national secondary road (N65) and number of regional roads (R351, R352, R353 & R355) and local

roads also converge in the town. These roads link Portumna with a number of towns and villages, such as Ballinasloe, Loughrea, Gort, Scarriff and Nenagh.

3.9.9 Energy/Renewable Energy and Telecommunications Infrastructure

Developments require adequate power, energy and telecommunications services, including electricity, gas supply, telephone services and broadband, which are provided by a number of different service providers. Portumna is served by Eircom and a number of mobile telecommunications operators.

3.9.10 Licensed Facilities

3.9.10.1 IPPC Licensed Facilities

There is currently one licenced IPPC Facilities in operation in the plan area. The EPA licence reference is P0816-01 and it relates to Green Isle Foods Limited. The receiving water is a tributary stream to Lough Derg. Figure 3.28 illustrates the location of this facility.

3.9.10.2 Waste Licensed Facilities

There are currently no waste licenced facilities in the plan area.

3.9.11 Existing Problems

- Certain regions of the plan area are not within the catchment of the waste water treatment network and consequently developments in these areas use septic tanks to treat waste water arising;
- The main impacts on Lough Derg are the Portumna WWTP and agricultural run-off.

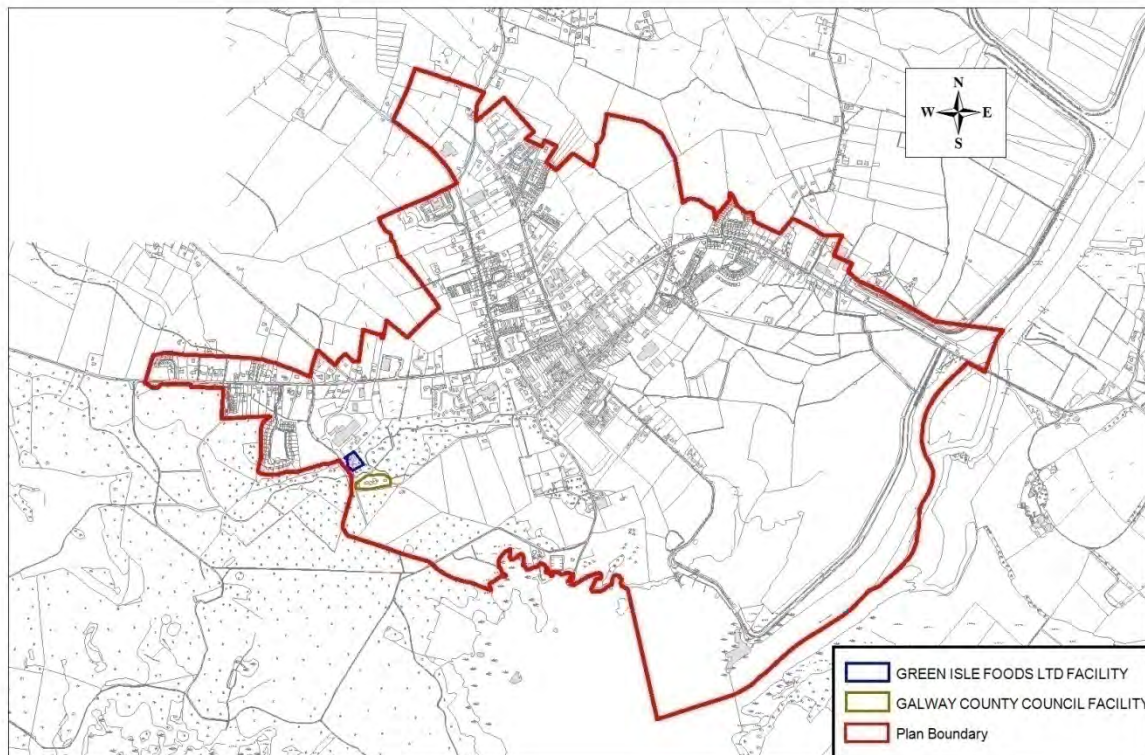


Figure 3.28 Location of EPA Licensed Facilities. (Source: GCC & WFD)

3.9.12 Evolution of Material Assets in the absence of a Local Area Plan

The current legislation which provides for the protection and enhancement of water resources and quality

at European, National, Regional and County level will protect and maintain existing water bodies in the plan area. However, in the absence of a local area plan there would be no planning framework to regulate, and control development in accordance with specific local issues in relation to potable water, wastewater treatment, flooding and development.

3.9.13 Inter-relationships with Other Environmental Parameters

The environmental parameter material assets (wastewater, drinking water, waste management & transport) all have inter-relationships with the other environmental parameters. It is essential that there are an adequate and sufficient waste water treatment system and quality drinking water for the residents of the plan area. The transport infrastructure is centrally linked with a number of environmental parameters, it has a direct threat to local biodiversity, flora and fauna but it also improves the quality of life for the local residents.

	B	PHH	SG	W	AC	CH	L
Material Assets	✓	✓	✓	✓	✓	✓	✓

** In relation to Material Assets as this encompasses a wide spectrum of categories it is considered that the inter-relationship with water, wastewater and waste management would be regarded as minimal however there would be a relationship with transport infrastructure.*

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, CH=Cultural Heritage, L=Landscape).

3.10 Cultural Heritage

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

3.10.1 Archaeological Heritage

Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological deposits and underwater features including unrecorded shipwreck sites and other forms of underwater archaeology that may await discovery in the River Shannon.

3.10.2 Record of Monuments and Places

Portumna's archaeological heritage is protected under the National Monuments Acts (1930-2004), European Cultural Institutions Act 1997 and the Planning Acts.

The Record of Monuments and Places (RMP) is an inventory, put on a statutory basis by amendment to the National Monuments Act 1994, of sites and areas of archaeological significance, numbered and mapped. In Portumna, there are currently 16 entries to the Record of Monuments and Places (RMP). entries, some of which overlap are mapped on Figure 3.29.

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

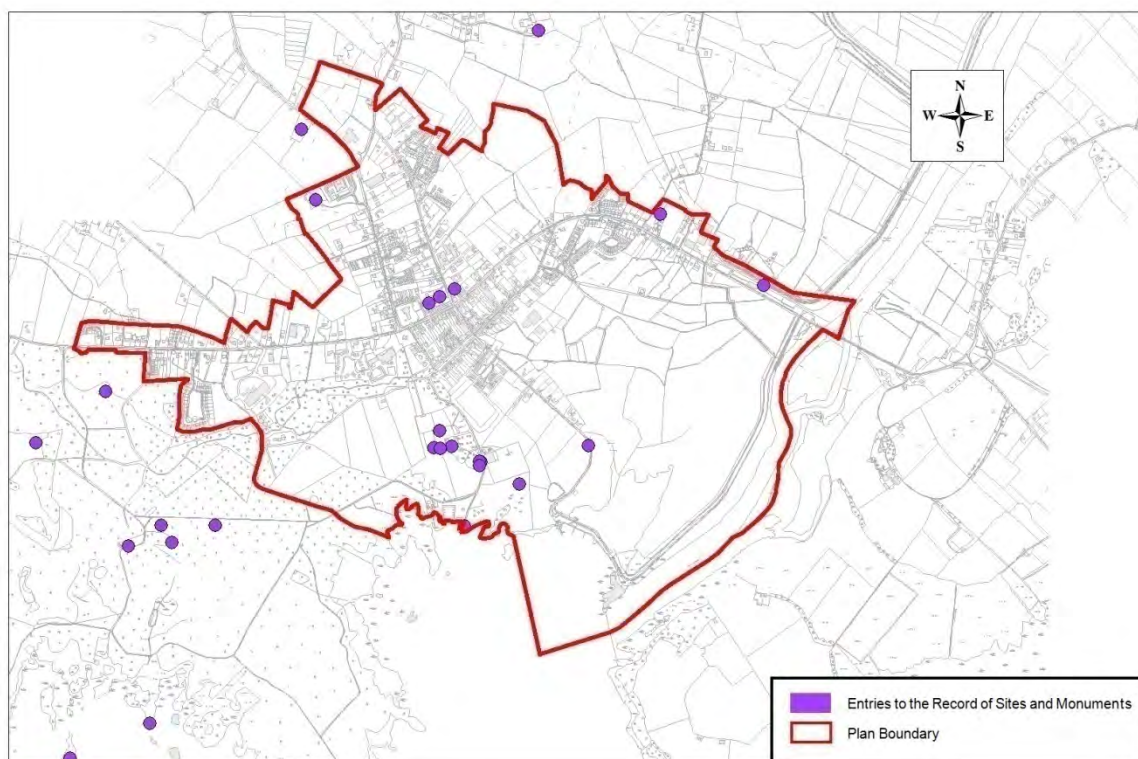


Figure 3.29 Entries to the Record of Monuments and Places. (Source: GCC & DAHG Archaeological Constraints Map: www.archaeology.ie).

3.10.3 Architectural Heritage

Portumna originated as a monastic settlement in the thirteenth century when the Cistercian chapel was founded in 1254. Thereafter, the chapel/priory was taken over by the Dominican's in 1426 and subsequently it came into the ownership of the Earl of Clanricarde in 1577. Portumna Castle was built by Richard Burke (De Burgo) the fourth Earl of Clanricarde in 1617. Historically, the town was structured around one street extending from the gates of the Castle towards the ferry point in the north-east. In the early nineteenth century, a new main street was built north of the original main street and same constitutes St Brendan's Street and Clonfert Avenue today.

3.10.4 Record of Protected Structures

The Record of Protected Structures (RPS) is legislated under Section 12 and Section 51 of the *Planning and Development Act, 2000 (as amended)*. There are currently 33 Protected Structures within the plan area. Of note is the Workhouse which is of regional value while Portumna Castle is a protected structure of national importance.

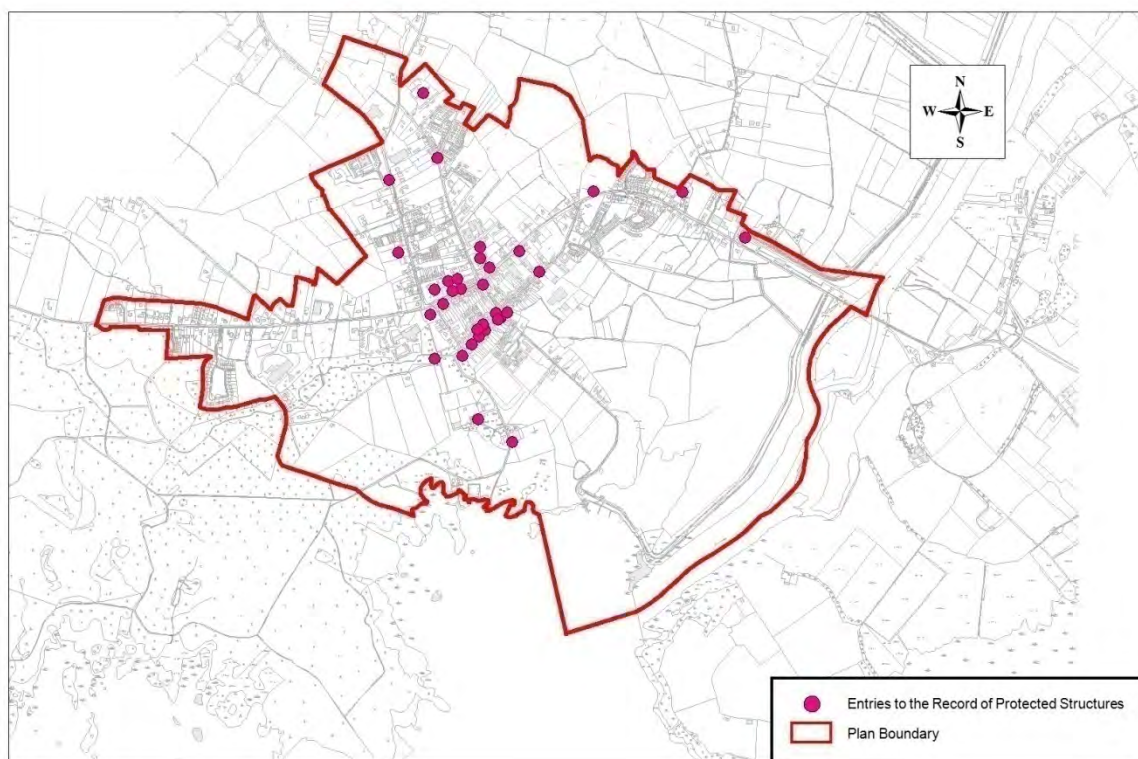


Figure 3.30 Current Entries to the Record of Protected Structures. (Source: GCC)

3.10.5 Architectural Conservation Areas

There is currently an Architectural Conservation Areas (ACAs) within the plan area and same is delineated overleaf in Figure 3.31.

Statement of Significance

Portumna's principal significance lies in the combination of its street pattern, plot sizes and architectural coherence. The vast majority of buildings spans the late 18th to late 19th centuries and share many characteristics. Surviving traditional shopfronts are important features. For its size, Portumna contains a generous number of buildings of national or regional significance. The town as a whole is attractive and inviting as a place to live as well as for visitors to the Lough Derg area, Portumna Castle and other attractions and exhibits delightful inventiveness and variety.

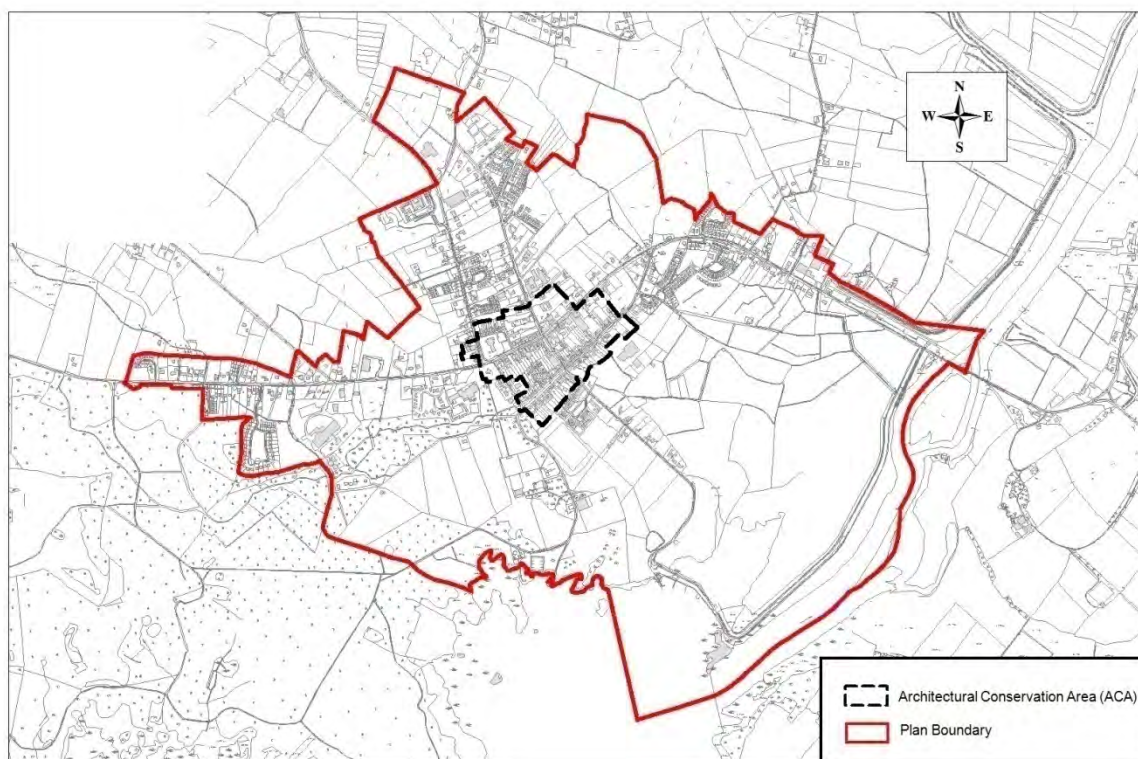


Figure 3.31 Architectural Conservation Areas (ACA). (Source GCC)

3.10.6 Existing Problems

- Developments within archaeologically or architecturally sensitive areas have the potential to individually or cumulatively impact upon cultural heritage of the plan area;
- Archaeology can be previously unknown but can be damaged through development causing ground disturbance;
- Development which involves material alteration or additions to protected structures can detract from the special character of the structure and its setting;
- Development on sites adjoining protected monuments, places or structures can also impact upon the setting of these cultural heritage items;
- Encouraging and facilitating the accommodation of growth on brownfield sites will contribute to mitigating a number of the adverse impacts associated with greenfield development, however, brownfield development has the potential to have a significant adverse impact upon cultural heritage both archaeological and architectural if unmitigated against.

3.10.7 Evolution of Cultural Heritage in the absence of a Local Area Plan

Portumna has a significant assembly of cultural heritage and extensive and effective legislation and guidance from international and national level affording both the architectural or archeological elements a high level of protection. However, in the absence of a Local Area Plan there may not be a framework within which to regulate aid or control development which may lead to uncontrolled development resulting in losses and or deterioration in the cultural assets of the plan area. The cultural heritage of the plan area would suffer due to insufficient monitoring and guidance.

3.10.8 Inter-relationships with other Environmental Parameters

The environmental parameter cultural heritage has an inter-relationship with the other key environmental parameters.

	B	PHH	SG	W	AC	M*	L
Cultural Heritage	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors, M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.11 Landscape

Landscapes are areas which are perceived by people and are made up of a number of layers: landform, which results from geological and geo-morphological history; land cover, which includes vegetation, water, human settlements, and human values which are a result of historical, cultural, religious and other understandings and interactions with landform and land cover. Portumna's green pastoral landscape has been shaped primarily by the impact of the Celts, Monks, Gaelic and Normans in pre-historic times. The River Shannon which caresses the town has also played a key role in shaping the development of the town.

3.11.1 Landscape Character Assessment¹⁴

In accordance with the DEHLG's Landscape and Landscape Assessment Guidelines (2000), Galway County Council prepared a Landscape Character Assessment (LCA) for the County in 2003, which also forms part of the current CDP. It classifies landscapes according to their:

- Character;
- Values; and,
- Sensitivity.

It is noted that, although the LCA was undertaken at a county level and its applicability is reduced at local levels, the content of the LCA provides useful information for this environmental assessment of the plan area.

3.11.2 Landscape Character Areas

Landscape character is a combination of landform, land cover and visual units, which are attractive in the landscape. The LCA identified 25 character areas within the county. The character areas relating to the plan area are mapped in Figure 3.32.

- **Area 1: East Central Galway (Athenry, Ballinasloe to Portumna)**

The landscape is flat, coarse grassland, with occasional clumps of coniferous forestry between 1-3 km² in size and fields defined principally by stone walls. There are no areas of particular scenic value, although the stone walls are quite distinct. This classification covers the remaining lands in the plan area.

- **Area 2: Shannon and Suck River Valley between Ballinasloe and Portumna**

The landscape of the river valley is flat, bordered by deciduous trees and water-edge planting. Also along the riverbank are recreational facilities for fishing, bird watching and boating. There are local scenic views along the river and to the local heritage sites. Long distant views are to the Aughty Mountains. This character area covers lands in the east of the plan area.

- **Area 3: North West Lough Derg**

The attractive waterside edge setting is open and flat and therefore is highly sensitive to development owing to its exposed nature.

¹⁴ Text in this section is sourced from the Galway Landscape Character Assessment (Galway County Council, 2003)

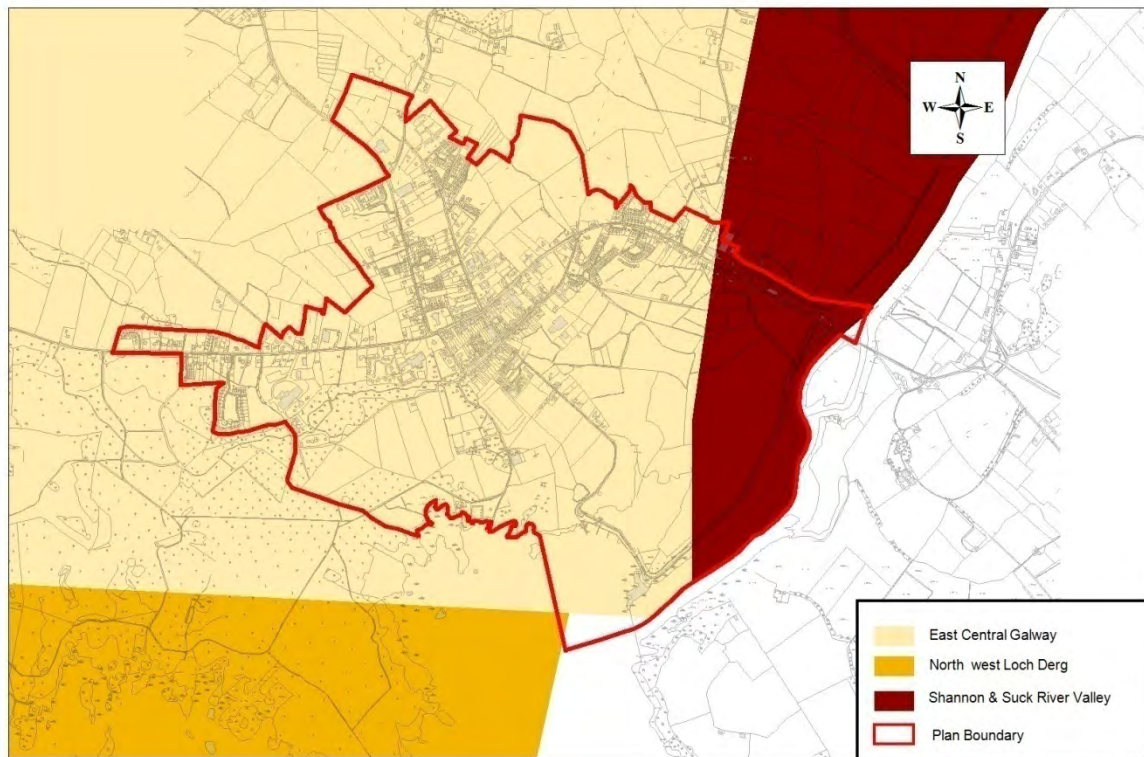


Figure 3.32 Landscape Character Area. (Source Landscape Character Assessment 2003, GCC)

3.11.3 Landscape Values

The LCA derived landscape values were derived for each landscape character area by consideration of environmental and cultural benefits such as visual beauty, ecology, archaeology, social history, religious sites and mythology. The values were given a score ranging from low to medium to high to outstanding. The southern area of the plan, encompassing Lough Derg and segments of adjoining terrain is classified as being of high value. The central band of the plan area - including the town centre and Shannon River Callows - is classified as being of a moderate value, while the north of the plan area is designated as being of a low value. Landscape values are mapped on Figure 3.33.

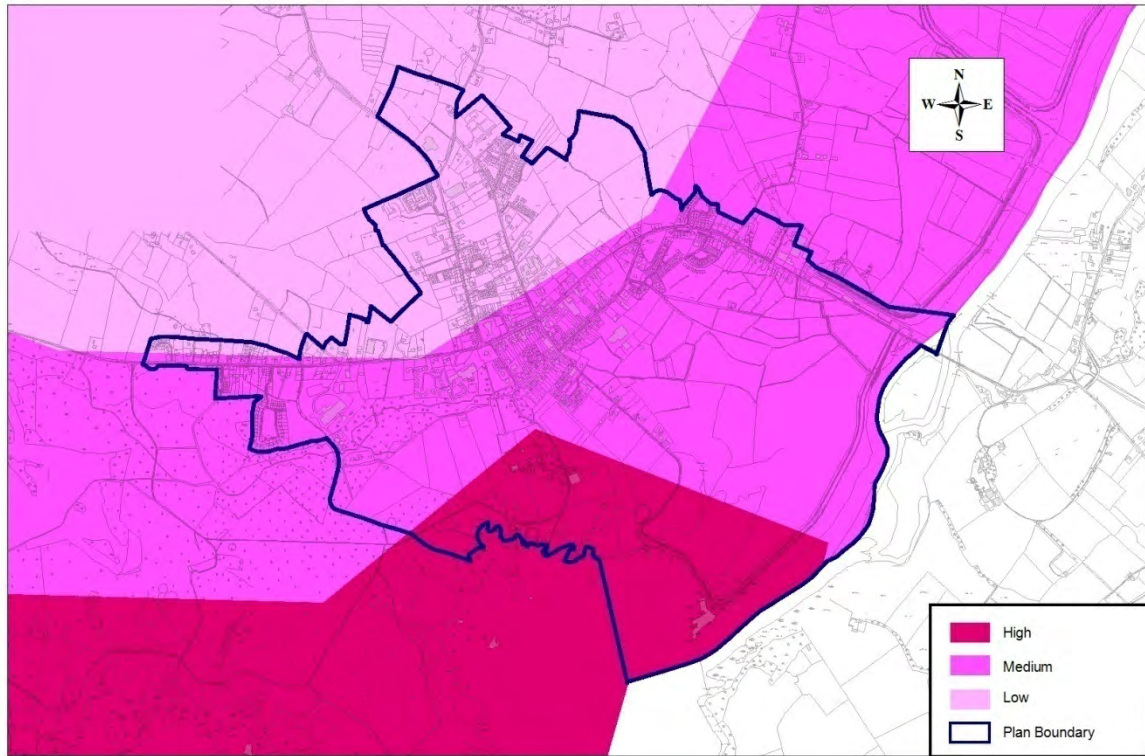


Figure 3.33 Landscape Values. (Source Landscape Character Assessment 2003. (Source GCC)

3.11.4 Landscape Sensitivity Classes

Landscape sensitivity is a measure of the ability of the landscape to accommodate change or intervention without suffering unacceptable effects to its character and values. Sensitivity ratings are derived from a combination of landscape values and landscape character.

The following five sensitivity classes were established by the LCA:

- Class 1 – Low sensitivity;
- Class 2 – Moderate sensitivity;
- Class 3 – High sensitivity;
- Class 4 – Special; and,
- Class 5 – Unique.

The callows of the Shannon River and the general surrounds of Portumna Castle are both classified as having a high sensitivity. The landscape associated with Lough Derg and segments adjoining same are classified as having special sensitivity. These aforementioned landscapes are most vulnerable to change. The central band of the plan area - including the town centre - is classified as being of a moderate sensitivity while the remainder of the north of the plan area is designated as being of a low sensitivity. Figure 3.34 illustrates the landscape sensitivities within the plan area.

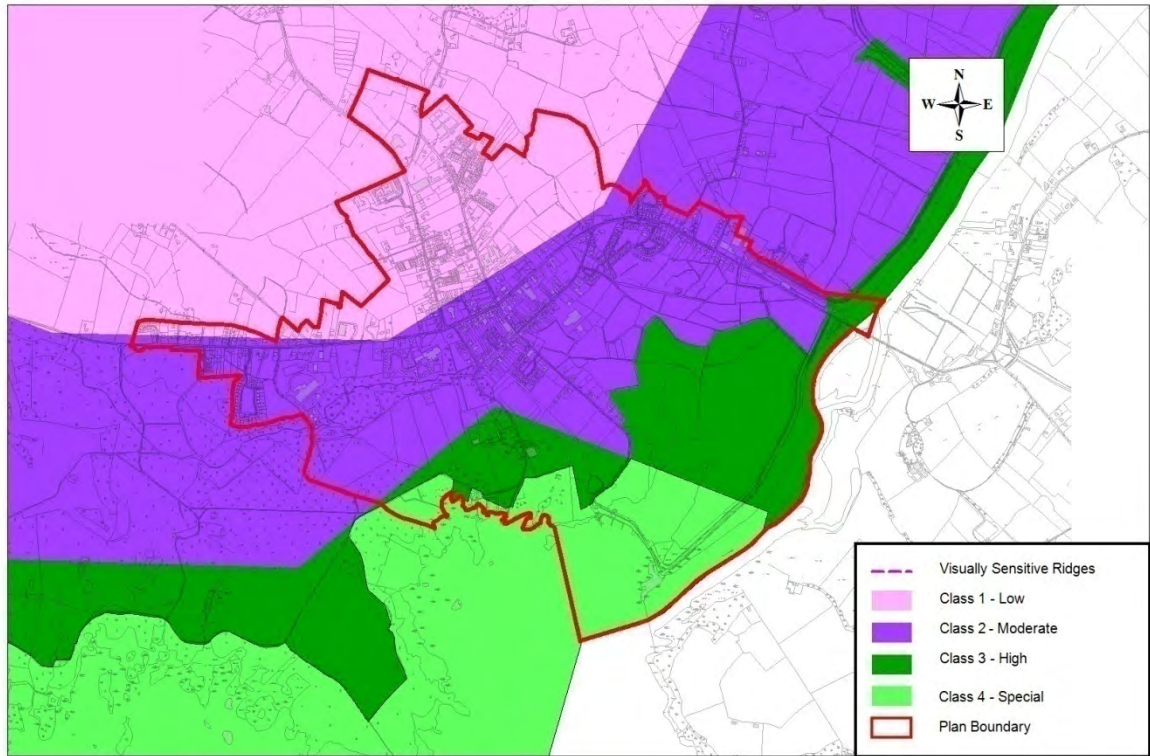


Figure 3.34 Landscape Sensitivities and Visually Sensitive Ridges. (Source: GCC)

3.11.5 Focal Points and Views

There is currently one listed focal point and view within the plan area and it relates to the two church towers in the town.

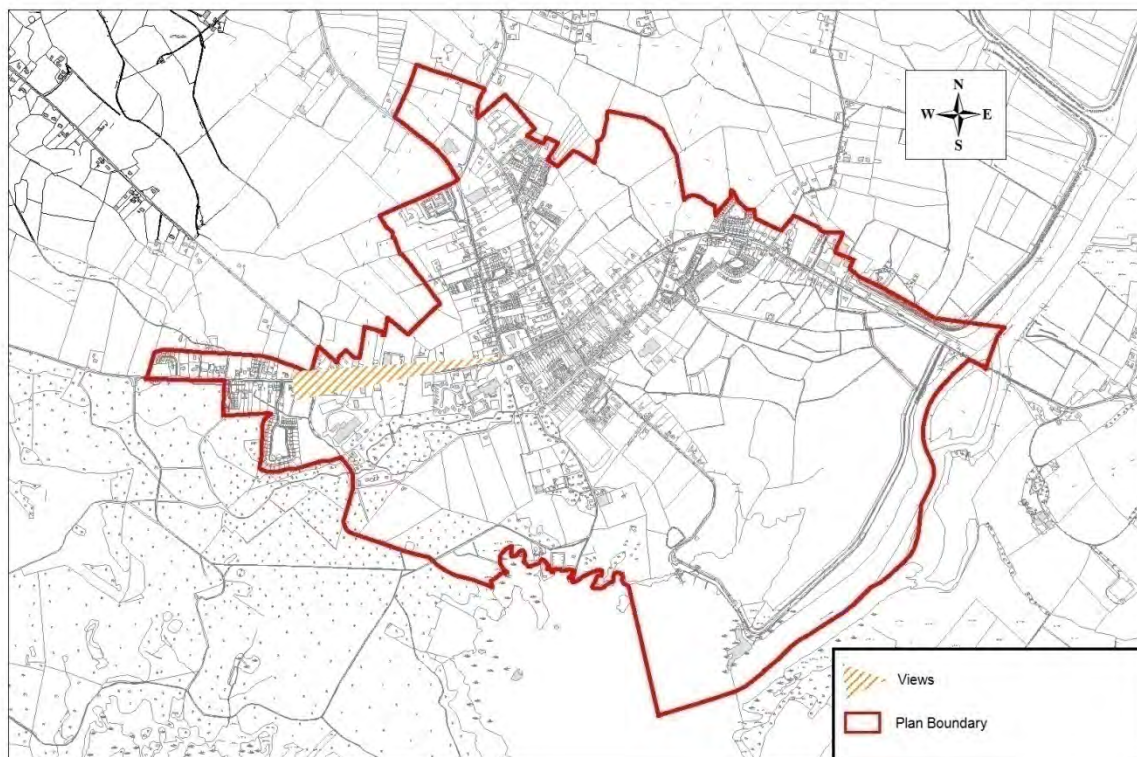


Figure 3.35 Views (Source: GCC)

3.11.6 Existing Problems

A problem with regard to the environmental component of landscape is the cumulative visual impact which occurs as a result of developments such as one off houses. Such developments, which individually often do not have significant adverse impacts, have the potential to cumulatively and adversely have a significant impact upon sensitive landscapes.

3.11.7 Evolution of Landscape in the absence of a Local Area Plan

In the absence of the Local Area Plan there would be no framework within which to regulate and manage future developments. A lack of development objectives would lead to uncontrolled developments with no framework to identify specific locations for developments. Development would occur on an ad-hoc basis, which would have a cumulative impact on the landscape and there would invariably be development pressures on a number of specific locations. The Local Area Plan will include objectives that provide for the preservation, protection and enhancement of the landscape as part of an integrated sustainable approach to future development within the plan area. In the absence of a plan, this would remove this protection and enhancement measures for the landscape, potentially leading to its fragmentation, loss and deterioration.

3.11.8 Inter-relationships with Other Environmental Parameters

The environmental parameter landscape has an inter-relationship with the other key environmental parameters. The landscape in which we live in inter-relates all facets of the environment, including human health and quality of life. It also impacts on the biodiversity, flora and fauna and water

quality.

	B	PHH	SG	W	AC	M	CH
Landscape	✓	✓	✓	✓	✓	✓	✓

(B=Biodiversity, Flora & Fauna, PHH=Population, Human Health, SG=Soil & Geology, W=Water, AC=Air & Climatic Factors M=Material Assets, CH=Cultural Heritage, L=Landscape).

3.12 Overlay of Environmental Sensitivities of the Plan Area

In order to identify where the most sensitivities within the plan area occur, a number of the environmental sensitivities described in this section were weighed and mapped overlapping each other. Figure 3.36 provides an overlay of environmental sensitivities in the Portumna area. By mapping key environmental layers (GIS) to produce an environmental sensitivities map, it provides a visual impression which can assist in identifying which areas within the plan area experience environmental sensitivities, the highest concentration (i.e. indicates the level of overlap) of environmental sensitivities and consequently the areas potentially most vulnerable to environmental impacts from development. The physical extent of the environmental sensitivity extends beyond the defined area on the map, as the potential impact can be generated at a location outside of the plan area. Environmental sensitivities are indicated by colours which range from extreme vulnerability, high vulnerability, elevated vulnerability, moderate vulnerability and low vulnerability. Where the mapping shows a concentration of environmental sensitivities, there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration.

The map effectively reflects where the key concentrations of sensitivity are situated within the plan area. These include:

- Lough Derg and River Shannon Callows SAC are identified as ranging from high, extreme to acute vulnerability;
- Lough Derg(Shannon) SPA are identified as ranging from high, extreme to acute vulnerability;
- Most of the plan area is identified as being low to moderate vulnerability;
- Areas to the south east of the plan area are regarded as more vulnerable.

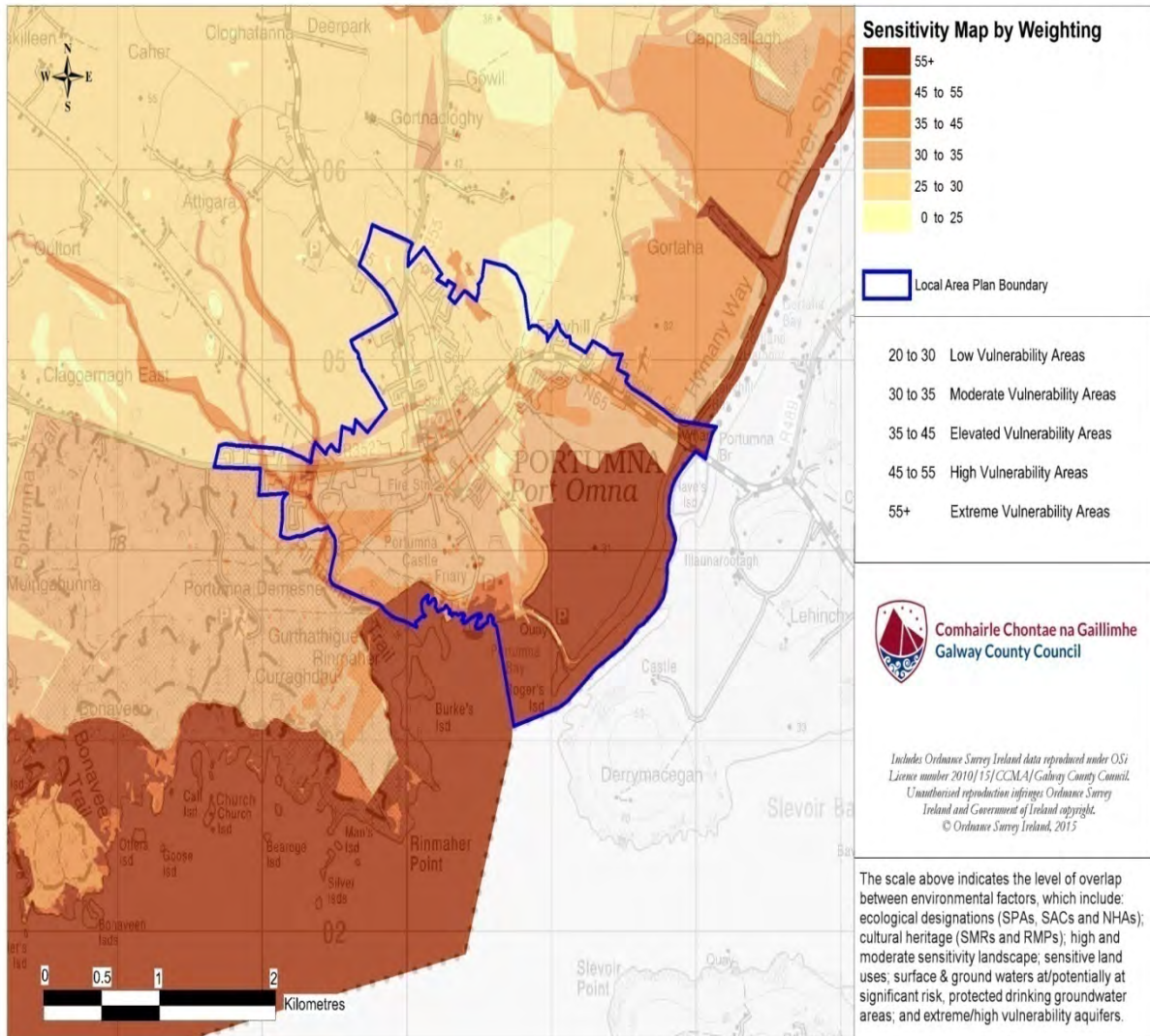


Figure 3.36 Overlay of Environmental Sensitivities (Source GCC)

Section 4 Review of Relevant Policies, Plans and Programmes

4.1 Introduction

The objective of the SEA Directive is

“to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations in the preparation and adoption of plans and programmes with a view to promoting sustainable development”.

In order to meet the requirements of the Directive in this respect, the environmental assessment must,

‘...identify the environmental protection objectives, established at International, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.’

The purpose of this review is to take into consideration the policy and legislative framework within which the *Portumna Local Area Plan 2016-2022* is being developed. Consideration has been given to the key statutory and non-statutory plans, programmes and policies relevant to the Local Area Plan in order to inform the SEA Strategic Environmental Objectives and Targets (discussed further in Section 6). It is important in terms of the development of Portumna that the Draft Local Area Plan adheres to policy and strategic options which are pre-determined by higher level plans and guidelines.

A distinction must be made between the different sets of objectives, which have an influence on the preparation of the *Draft Portumna Local Area Plan*. International and national strategies and policies have a strong role to play in establishing higher level agendas such as climate change, while the Portumna level plan objectives are more specific and localised in their orientation. Additionally, a third set of objectives, i.e. Strategic Environmental Objectives (see Section 6 & 7) must also be taken into account. The following section provides an overview of the key planning policies that are relevant and which influence the *Portumna Local Area Plan*. This list is comprehensive however it is not exhaustive and will be amended throughout the plan review and the preparation process as new policy, guidance plans programmes etc are adopted.

Appendix II provides details on all key legislation, plans and programmes which are considered most relevant to the Local Area Plan.

4.2 The Key Relevant Planning Policies

The following is a summary of the key relevant policies, plans and programmes in relation to the *Portumna Local Area Plan 2016-2022*.

4.2.1 Planning and Development Policies

National Development Plan (2007-2013)

The National Development Plan integrates strategic development frameworks for regional, development, for rural communities, for all-island co-operation, and for protection of the environment with common economic and social goals. The National Development Plan together with the National Spatial Strategy and Regional Planning Guidelines must inform the development of Galway through its County Development Plan and associated core strategy, which in turn informs the *Portumna Local Area Plan*.

National Spatial Strategy (2002-2020)

The National Spatial Strategy (NSS) is a 20 year planning framework to guide policies, programmes and investment in the interest of delivering balanced social, economic and physical development and population growth between the regions. The National Spatial Strategy together with the Regional Planning Guidelines must inform the development of Galway through its County Development Plan and associated core strategy, which in turn informs the *Portumna Local Area Plan*. The NSS is based on a

hierarchy of settlements including gateways, hubs, county towns, smaller towns, rural villages and diverse rural economies. Within the NSS, Galway is recognised as a 'Gateway' which has a strategic location, nationally and relative to its surrounding areas, and provides national scale social, economic infrastructure and support services. Strategic issues of importance relevant to Portumna include effective integration in terms of land use and transportation and maintaining a high quality environment.

The Regional Planning Guidelines for the West Region 2010 – 2022

These Guidelines cover the area of the West Regional Authority. The Regional Planning Guidelines (RPGs) work to implement the strategic planning framework set out in the National Spatial Strategy (NSS). As part of the planning framework, the Guidelines allocate housing and population targets for the individual counties based on national and regional population targets set by the NSS.

Galway County Development Plan

This plan was prepared in accordance with the requirements and provisions of the Planning and Development Act and sets out an overall strategy for the proper planning and sustainable development of County Galway over the period 2015-2021. This plan is very relevant to *Portumna Local Area Plan* as it sets out an overall vision, core strategy, policies and objectives for the County. The County Development Plan designates Portumna as the "Key Town".

4.2.2 Environmental Plans and Policies

Habitats (92/43/EEC) and Birds (2009/147/EC) Directives

These directives seek to protect habitats and species which are important at a European level. The Habitats Directive requires Ireland and other EU member states to designate Special Areas of Conservation (SACs) where either one or many Annex I habitats or Annex II species occur while the Birds Directive protects bird species through designation of Special Protection Areas (SPAs). Together, these form the European Network of sites. There are a number of European sites within 15km of the Local Area Plan. The Local Area Plan must protect this designated site and the habitats and species for which they have been designated (see also the Appropriate Assessment of the *Portumna Local Area Plan 2016-2022* (Draft) Natura Impact Report).

European Communities (Bird and Natural Habitats) Regulations

The European Communities (Bird and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997-2005 and the European Communities (Bird and Natural Habitats) (Controls of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

Galway County Heritage Plan 2010- 2016

This is the second Heritage Plan for County Galway and carries forward the overall aim of the first plan, which is to "place heritage at the heart of the life of the county through increasing awareness, enjoyment, knowledge and understanding of our shared heritage thereby leading to its proper management and protection and safeguarding it for future generations". The aims and objectives of the *Draft Portumna Local Area Plan 2016-2022* are consistent with this Plan.

Water Framework Directive (2000/60/EC)

This Directive seeks to maintain and enhance the quality of all surface water and groundwater in the EU. The Directive is focused at the River Basin District (RBD) level to ensure that all potential pathways for pollution can be explored and measures to mitigate negative impacts can be better focused. There are eight RBD's on the island of Ireland and Portumna falls within the Shannon International River Basin District (SIRBD).

River Basin Management Plans and associated programmes of measures have been developed for each region and must be implemented. *The Portumna Local Area Plan 2016-2022* must have regard to these measures. The assessment of potential impacts on water quality needs to be considered in the context of the WFD and the River Basin Management Plan and Programme of Measures for the Shannon International River Basin District which lays out the objectives for waters within the area.

Surface Water Regulations (2009)

Aligned to the WFD is the Surface Water Regulations (S.I. 272 of 2009). These Regulations have significant implications across a range of existing legislation. They provide for the classification of surface water bodies by the EPA for the purposes of the Water Framework Directive.

Groundwater Directive (2006/118/EC)

The Directive seeks to prevent and combat groundwater pollution in the EU. It contains key criteria for the assessment of the chemical status of groundwater, for identifying significant upward trends in groundwater pollution levels and for preventing and limiting indirect discharges of pollutants to groundwater.

Environmental Liability Directive (2004/35/EC)

The Directive establishes a framework for environmental liability based on the "polluter pays" principle, with a view to preventing and remedying environmental damage. The principle of liability applies to environmental damage and imminent threat of damage resulting from occupational activities, where it is possible to establish a causal link between the damage and the activity in question.

Floods Directive (2007/60/EC) and Associated CFRAMS

Floods are a natural and inevitable part of life in Ireland. Floods pose a risk to human life and wellbeing, can cause extensive damage to property and have significant consequences for the environment. With the effects of climate change, it is likely that there will be more frequent and severe flooding events in the future. The EU has responded to this with the Floods Directive. This Directive sets a framework for proactive management of flooding and, like the WFD, will see measures being implemented through the development plan process. The first step in this is the development of Catchment Flood Risk Assessment and Management Studies (CFRAMS) which are ongoing, these studies will identify areas susceptible to flooding and identify measures to reduce or eliminate flooding in key areas. However, due to the delay in publishing the final CFRAM maps, the Planning Authority has carried out a Stage 2 Strategic Flood Risk Assessment (SFRA), which forms part of the preparation of the plan.

The Planning System and Flood Risk Management – Guidelines for Planning Authorities 2009 & Circular PL2/2014

These guidelines were published by the Department of Environment, Heritage and Local Government and the Office of Public Works in November 2009. The Guidelines are aimed at ensuring a more consistent, rigorous and systematic approach to fully incorporating flood risk assessment and management into the planning system.

The guidelines will require the planning system at National, Regional and Local levels to:

- Avoid development in areas at risk of flooding, such as floodplains, unless there are wider sustainability grounds that justify appropriate development; and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere;
- Adopt a sequential approach to flood risk management and guide development away from areas that have been identified as being at risk through flood risk assessment, in areas of high risk, for example, should see water-compatible developments such as docks and marinas, amenity open space, outdoor sports and recreation, while other more vulnerable development should be directed towards areas of minimal or no flood risk;
- Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

An important context for these Guidelines is the need to adapt to inevitable impacts of climate change. Future impacts are likely to be felt in every sector of the economy and may include both persistent long-term changes and acute short-term events. Increased frequency and magnitude of flooding due to heavier rainfall, sea level rises and storm surges are among the most serious threats for Ireland. These Guidelines have statutory force under Section 28 of *the Planning and Development Act 2000 (as amended)* In addition to the Guidelines *Circular PL2/2014* was issued by the Department of the Environment, Community & Local Government in August 2014 and relates to areas that are developed but are located in a Flood Risk area. Certain areas of the *Draft Portumna Local Area Plan* area are

susceptible to flooding therefore it is acknowledged that the objectives of the *Draft Portumna Local Area Plan 2016-2022* will be generally consistent with the Guidelines.

Urban Waste Water Directive (91/271/EEC), amended by Directive (98/15/EEC)

The primary objective 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. The Waste Water Treatment Plant began operating in 2001 and currently treats effluent for a population equivalent (p.e) of 2,870 (2014) and an estimated (p.e) of 3,043 in 2020. Portumna WwTP was designed and constructed to cater for a design population of 3,100, providing secondary and nutrient treatment after which it discharges to Lough Derg. As outlined above the current loading is 2,870 (2014) which indicates that the site is significantly under loaded.

Drinking Water Directive (80/778/EEC) as amended by (Directive 98/83/EC)

The primary objective is to protect the health of the consumers in the European Union and to make sure drinking water is wholesome and clean. The (Drinking Water) (No. 2) Regulations 2007 (SI No. 278 of 2007) have the following aims:

- To provide for the creation of EPA and local authorities as supervisory authorities;
- To set obligations for water suppliers to provide wholesome and clean drinking water;
- To ensure protection of public health;
- To inform the public; and
- To monitor and carry out remedial action.

The primary source of Portumna's public water supply is the Portumna Water Treatment Plant which sources water from Lough Derg. The reservoirs serving Portumna Town and the surrounding areas are located on site and at Gallas Hill.

Water Services Act (2007) and Irish Water Capital Investment Plan 2014-2016

The Water Services Act provides for provision of water services and gives effect to certain Acts adopted by the institutions of the European Communities. The Act identifies and prioritises national water infrastructure through the Water Services Investment Programme (WSIP). Irish Water is now the regulatory authority implementing the investment and carrying out of infrastructural works. The WSIP works programme presents a balanced national strategic programme of works designed to support the national socio-economic objectives established by government in the National Development Plan and related plans and policies.

Surface Water Regulations (2009)

These regulations have significant implications across a range of existing legislation. They provide for the classification of surface water bodies by the EPA for the purposes of the Water Framework Directive which dictates that waterbodies are required to achieve Good Status by 2015.

National Climate Change Strategy, 2007-2012

The National Climate Change Strategy 2007-2012 was published in April 2007 and builds on the commitment for sustainable development as set out in *Towards 2016* and the National Development Plan 2007-2013. The Strategy provides a framework for the achievement of reductions in greenhouse gas emissions as an essential step in achieving the targets agreed under the Kyoto Protocol. In broad terms the purpose of the Strategy is to:

- Show clearly the measures by which Ireland will meet its 2008-2012 commitment;
- Show how the measures position us for the post 2012 period, and identify the areas in which further measures are being researched and developed to enable us to meet our 2020 commitment.

The Strategy recognises that, while progress in emissions reductions has been made, significant further advances are required. The objectives of the *Draft Portumna Local Area Plan 2016-2022* are broadly consistent with this Strategy.

National Climate Change Adaptation Framework (DECLG, 2012)

The DECLG is the body responsible for climate change policy in Ireland. The National Climate Change Adaptation Strategy sets out how Ireland is to meet its objectives under the Kyoto Protocol. The Strategy sits within the National Climate Change Adaptation Framework which provides the policy context for the national response to achieving the objectives in a strategic manner. The Framework also requires Local Authorities, relevant agencies and Government Departments to prepare and publish draft adaptation plans by mid-2014. The objectives of the *Draft Portumna Local Area Plan 2016-2022* are broadly consistent with this Framework.

County Galway Wind Energy Strategy, 2015-2021

The County Galway Wind Energy Strategy forms part of the Galway County Development Plan 2015 – 2021. The Wind Energy Strategy will facilitate development of wind farms by maximising the wind resource of the county having regard to recent technological advances in turbine design, updated information on wind speeds, proximity and availability to grid connections and to changing energy and grid connection regulations, while minimising any environmental and visual impacts. The objectives of the *Draft Portumna Local Area Plan 2016-2022* are consistent with the County Galway Wind Energy Strategy.

European Convention on the Protection of the Archaeological Heritage, 1992 (the ‘Valletta Convention’)

This convention was ratified by Ireland in 1997. Its aim is to ‘protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study’. It requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.

Architectural Heritage Protection – Guidelines for Planning Authorities 2004

These guidelines were first published by the Department of the Environment, Heritage and Local Government in 2004. They outline the guidelines concerning development objectives for protecting structures, or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest and for preserving the character of architectural conservation areas. These guidelines are issued under Section 28 and Section 52 of the *Planning and Development Act 2000 as amended by Section 20 of the Planning and Development Act 2010*. It is considered that the policies and objectives of the *Draft Portumna Local Area Plan 2016-2022* are broadly consistent with the Guidelines.

Record of Monuments and Places

The Record of Monument and Places (RMP) is a statutory list of all known archaeological monuments provided for in the National Monuments Acts. The RMP consists of a published county by-county set of Ordnance Survey maps on which monuments are marked by a circle and an accompanying book which specifies the type of monuments. The County Council’s objectives with regard to the Record of Monument and Places for County Galway are broadly reflected in the *Draft Portumna Local Area Plan 2016- 2022*.

European Landscape Convention

This convention was signed and ratified by the Irish Government in March 2002 and came into effect in Ireland in 2004. It aims to promote the protection, management and planning of landscapes. The Convention outlines specific measures to be implemented namely relating to awareness raising, training and education, identification and assessment, landscape quality objectives and implementation.

National Landscape Strategy for Ireland 2015-2025

The National Landscape Strategy for Ireland 2015-2025 strives to provide a policy framework that will put in place measures at national, sectoral –including agriculture , tourism, energy, transport and marine and local level to protect, manage and properly plan through high quality design for the sustainable

development of the country's landscape. The Strategy recognises the importance of landscape protection and its interconnectivity with biodiversity and climate change. It is also recognized that soil and geology are a key component in defining and forming local landscapes.

Draft Landscape and Landscape Assessment Guidelines 2000

These Guidelines set out a methodology, called Landscape Character Assessment, which Planning Authorities should use to underpin the provisions related to landscape matters in their statutory plans. The Guidelines favour a method of characterisation of the landscape based initially on land cover – trees, vegetation, settlement, water, etc., and landform which results from geological and geomorphologic history.

Section 5 Draft Portumna Local Area Plan 2016-2022

5.1 Introduction

Galway County Council has initiated the preparation of a local area land use plan for the *Portumna Local Area Plan 2016-2022* in order to ensure that future development is accommodated in a sustainable and planned manner once adopted. The Draft Local Area Plan will replace the current Portumna Local Area Plan 2005-2011 and it is intended to provide for the proper planning and sustainable development for Portumna for the duration of six years from the date of which it is adopted, unless amended.

5.2 Draft Portumna Local Area Plan 2016-2022-Context

The Draft Portumna Local Area Plan has been prepared by Galway County Council under the provisions of the *Planning and Development Act, 2000(as amended)*. In accordance with the SEA Directive and Regulations, the Planning Authority had conducted a Screening exercise of the proposed *Portumna Local Area Plan 2016 – 2022* to determine whether or not a Strategic Environmental Assessment of same is necessary. This Screening exercise has determined that the Plan would be likely, if unmitigated, to have significant effects on the environment. These potential effects include:

- Adverse effects upon biodiversity and flora and fauna, including ecological networks;
- Adverse effects on the status of waters;
- Increase in flood risk and associated interactions with human health.

It is therefore considered that a full Strategic Environmental Assessment was required

The plan will be the guiding statutory document for the proper planning and sustainable development of the plan area. The plan, and any subsequent amendments will remain in place for a period of six years from the date of its adoption, unless otherwise revoked or the preparation of a Local Area Plan is deferred under the provisions of the Act.

The plan has two main purposes, first to provide a framework of acceptable uses within the plan area, defining acceptable forms of development and where they should be directed; and secondly to provide a detailed basis for the promotion and management of development. The objectives set out in the plan accord with the objectives set out in each of the higher tier policy documents. The higher tier documents are contained in Appendix II of this report.

The Local Area Plan sets out the overall strategy for the proper planning and sustainable development of the area and consists of a written statement and plan indicating the development objectives for the plan area. The overall strategy for the plan area is set out in Section 2 of the *Portumna Local Area Plan*.

5.3 Profile of Portumna

Portumna is located in south-east County Galway, approximately 68 kilometres south east of Galway City, 31 kilometres south of Ballinasloe and 24 kilometres west of Birr. The town straddles the county boundary with County Tipperary and it is recognised as the principle urban setting in south-east County Galway serving an extensive rural hinterland on either side of the county divide. Portumna is served by the National Secondary Road, the N65 and same acts as the main vehicular gateway to the town.

The Galway County Development Plan 2015 – 2021 identifies Portumna as a Key Town/Other Villages in the settlement hierarchy for the county. This entails it functioning as a self sufficient service hub, offering a range services including health, community, finance, employment, educational and retail provision to a broad catchment population. A significant industry and large employer, Green Isle Foods, has recently announced an expansion plan for its existing operation in the town that will result in additional employment at the facility. Tourism represents a major asset to the town which can be enhanced upon further in the future. Portumna is strategically positioned to benefit from boating and angling activity associated with the Shannon waterway. Furthermore, there is scope to augment the heritage tourism product emanating from Lough Derg, the Dominican Friary, Portumna Castle, Portumna Forest Park and Portumna Union Workhouse for the betterment of the locality.

The planning rationale behind the zoning of lands for development within the Draft Portumna Local Area Plan includes having regard to:

- *The Galway County Development Plan 2015-2021;*
- The provisions of Government Guidelines set out under section 28 of the *Planning and Development Act, 2000 as amended;*
- Consultation under Section 20 of the *Planning and Development Act, 2000 as amended;*
- Availability of services;
- Consolidation of the built environment;
- Sequential development;
- Sustainable development;
- The consideration under the Flood Risk Assessment, SEA and HAD processes.

5.4 Structure and Content

The Local Area Plan has been structured into 4 main sections with separate supporting documents:

Section 1	Introduction 1.1 Preamble 1.2 Profile of Portumna 1.3 Local Area Plan 1.4 Plan Structure 1.5 Plan Informants and Considerations
Section 2	Strategic Vision and Development Strategy 2.1 Strategic Vision 2.2 Development Strategy
Section 3	Development Policies, Objectives and Guidelines 3.1 Land Use Management 3.2 Residential Development 3.3 Social and Community Development 3.4 Economic Development 3.5 Tourism 3.6 Transportation Infrastructure 3.7 Utilities, Climate Change & Environmental Management 3.8 Urban Design and Landscape 3.9 Built Heritage and Cultural Heritage 3.10 Natural Heritage & Biodiversity
Section 4	Local Area Plan Maps Map 1A & 1B – Land Use Zoning Map 2A & 2B – Specific Objectives Map 3A & 3B – Flood Risk Management

5.5 Strategic Vision

The Local Area Plan envisages Portumna as a sustainable, self-sufficient and vibrant town, which maintains its attractive character, capitalises on its existing and future accessibility strengths. while offering a pleasant environment for a growing community, for living, for shopping, for education, business, recreation and tourism, all balanced against the need to safeguard and enhance the environmental sensitivities of the area, for present and future generations to come.

This strategic vision is informed by guiding principles enabling the overall vision to be achieved, these include the following:

- Realising the town's potential as one of the 'Key Towns' as set out in the *Galway County Development Plan* and attracting the population target established in the Core Strategy up to 2021 and beyond;
- Acknowledging that the medium term growth of Portumna should focus on new sustainable communities and adopt a sequential approach to the zoning of residential lands extending outwards from the centre of the town in line with the *Guidelines for Planning Authorities – Sustainable Residential Development in Urban Areas (Cities, Towns & Villages)* (2009);
- Reflecting the needs and aspirations of local communities, business and other interested and affected groups, as expressed through the public consultation process;
- Promoting sustainable land use and transport by capitalising on the potential to develop walking and cycling opportunities within the town focused around the forest and the river, so that sustainable travel such as walking, cycling and other smarter travel initiatives, along with integrated land use and transportation become central to the development of new neighbourhoods and the future development of Portumna;
- Maintaining and promoting a strong and vibrant town centre which sustains the ability to attract new businesses and meets the retailing and service needs of the town and its surrounding hinterland, in addition to offering a pleasant and attractive environment for shopping, business, tourism, recreation and living;
- Ensuring that there are a range of facilities, amenities and supporting services including educational, recreational, religious, social, community and civic requirements for children, youths, adults and the elderly, to serve a growing community;
- Optimising the potential of the town's strategic location, in close proximity to the River Shannon and as a service hub to an extensive rural hinterland, through facilitating and fostering appropriate tourism and economic development, through setting a positive and flexible framework, which enhances Portumna as a place for tourism and employment opportunities;
- Supporting the delivery of the necessary infrastructure to facilitate the future growth and sustainable development of the town;
- Protecting the natural assets, environment, built heritage and public realm of the town, including its local character for the benefit of future generations to come;
- Promoting a strong sense of community spirit, civic pride, local identity and social inclusiveness in the locality and establishing a strong local identity that is distinguishable from other areas.

Section 6 Environmental Assessment and Strategic Environmental Objectives

6.1 Introduction

SEA uses a combination of objectives, targets and indicators to predict impacts and describe and monitor change resulting from proposed plans and programmes on the environment (Therivel, 2004). Strategic Environmental Objectives (SEOs) and targets set aims and thresholds that should be taken into account when assessing the impact of the proposed plans and programmes on the environment. Allied to the development of the SEOs are environmental indicators and targets. Indicators facilitate the monitoring aspect of the SEA, while targets provide a realistic and achievable target to which the local authority can work towards. Indicators are used to illustrate and communicate impacts in a simple and effective manner. Indicators can also be used to form the basis of a monitoring programme for the plan.

6.2 Development of Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodical measures against which the environmental effects of the implementation of the *Draft Portumna Local Area Plan 2016-2022* can be tested. If complied in full, SEOs would result in an environmentally neutral impact from the implementation of the Draft Local Area Plan. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Draft Plan can be evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated.

SEOs are distinct from the objectives of the Draft Local Area Plan, although they will often overlap and are developed from international, national and regional policies which generally govern environmental protection objectives. Such policies include those of various European Directives which have been transposed into Irish law, all of which are intended to be implemented at county level and integrated into any plan for the county.

The SEA Directive requires that the evaluation of Plans and Programmes focus upon the relevant aspects of the environmental characteristics likely to be significantly affected. In compliance with this requirement, SEOs have been developed for the relevant environmental parameters, tailored to the environmental issues specific to the Draft Plan area. Focus has evolved throughout the SEA process, from the scoping stage to the compilation of the existing environmental baseline, identifying the key environmental issues and challenges which are prevalent within the plan area. In the case of the *Draft Portumna Local Area Plan*, these environmental criteria relate particularly to water supply, wastewater treatment, flooding, biodiversity and climate change.

Particular focus has been given to environmental parameters which are likely to be impacted upon as a result of implementation of the Draft Local Area Plan. The SEOs are linked to a series of targets and indicators which can facilitate in monitoring the implementation of the Plan when adopted (see Section 10 on Monitoring).

The primary source used in formulating the SEOs was Table 4B of the SEA Guidelines which have been tailored to be relevant to the plan area. The use of SEOs, although not a statutory requirement, does fulfill obligations set out in Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004, as amended. The SEOs formulated for this SEA for the *Draft Portumna Local Area Plan* area are broadly in line with those of the Galway County Development Plan and are set out in Table 6.1.

SEA Topics	SEO Objectives	Principal Aims of the SEO's	Detailed Assessment
Biodiversity, Flora and Fauna	<p>B1: To ensure compliance with the Habitats and Birds Directive with regard to the protection of European sites and Annexed habitats and Species¹⁵;</p> <p>B2: To ensure the protection, conservation to avoid the loss of diversity and integrity of a broad range of habitats, species and ecological and wildlife corridors and networks (non-designated sites) which provide connectivity between areas of local biodiversity within the <i>Draft Portumna Local Area Plan</i>;</p> <p>B3: Conserve and protect other sites of Nature conservation including NHAs and pNHAs.</p>	To maintain and enhance biodiversity.	<ul style="list-style-type: none"> • Conserve protected habitats and species; • Ensure compliance with Habitats Directive with regard to the protection of European sites; • Protect the diversity of habitats and species in non-designated sites.
Population, Human Health	PHH: To protect human health from hazards or nuisances arising from exposure to incompatible land uses.	Improve people's quality of life by providing a high quality residential, working and recreational environment, and through the achievement of good quality health.	<ul style="list-style-type: none"> • Protect human health from hazards or nuisances arising from exposure to incompatible land uses; • Increase modal shift to public transport, walking and cycling; • Improve access to recreation and community facilities; • Reduce pollution; • Improve access for mobility impaired.
Soil & Geology	<p>SG1: To prevent pollution and/or contamination of soil;</p> <p>SG2: Conserve, protect and avoid loss of diversity and integrity of designated habitats, geological</p>	Maintain the quality of soils.	<ul style="list-style-type: none"> • Maximise the sustainable re-use of brownfield sites and maximise the use of the existing built environment.

¹⁵ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

	features, species or their sustaining resources in designated ecological sites.		
Water	<p>W1: To maintain and improve, where possible, the status of surface waters;</p> <p>W2: To prevent pollution and contamination of ground water;</p> <p>W3: To comply as appropriate with the Provisions of the Planning System and Flood Risk Management Guidelines for Planning Authorities (DEHLG,2009) and associated Circular PL 2/2014.</p>	Prevent any deterioration in the status of water bodies and achieve the status objectives as set out in the Water Framework Directive; Address flood risk by Implementing the associated guidelines and circular.	<ul style="list-style-type: none"> • Maintain and improve the Biotic Quality Rating (Q value) of water bodies; • Achieve 'good' status in surface water bodies by 2015; • Ensure sustainable levels of abstraction from surface and groundwater; • Promote sustainable use of water and water conservation; • Promote sustainable drainage practices including the implementation of SUDS; • Prevent point source pollution; • Upgrade water services infrastructure; • Protect WFD register of 'protected areas'; • Mitigate the effect of flooding through the incorporation of a risk-based sequential approach to the management of flood risk, in adherence with the Planning Guidelines on flood risk management and associated <i>Circular PL2/2014</i>.
Air and Climatic Factors	AC: To reduce travel related greenhouse emissions to air and to encourage modal change from car to more sustainable forms of transport.	Reduce air pollution and control greenhouse gas emissions.	<ul style="list-style-type: none"> • Minimise greenhouse gas emissions to meet National and International standards; • Promote energy conservation and use of renewable energy systems; • Promote sustainable transportation patterns.
Material Assets	M1: To serve new development with adequate and appropriate waste water treatment;	Maximise the use of existing infrastructure and plan for future needs.	<ul style="list-style-type: none"> • Ensure provision of water services to serve existing and new communities;

	<p>M2: To serve growth areas with drinking water that is both wholesome and clean;</p> <p>M3: Make the best use of existing road and transportation infrastructure.</p>		<ul style="list-style-type: none"> • Ensure provision of sustainable transportation infrastructure which reduces the need for car borne travel and reduces journey length; • Promote sustainable waste management practices; • Provide for the development of effective energy and communications infrastructure.
Cultural Heritage	<p>CH1: To protect the archaeological heritage of the town including entries to the Record of Monuments and Places and/or their context and Architectural Conservation Areas;</p> <p>CH2: To preserve and protect the special interest and character of the town's architectural heritage.</p>	Promote the protection and where appropriate, conservation, of cultural heritage, including Architectural and archaeological heritage.	<ul style="list-style-type: none"> • Protect and preserve features of special interest as included in the RPS, RMP and ACA; • Protect and enhance physical features and areas that contribute to the town's special character and setting; • Encourage appropriate re-use of the traditional or historic building stock; • Enhance access to sites of heritage interest.
Landscape	<p>L: To avoid significant adverse impacts on the landscape, especially with regard to landscapes which are most valuable and most sensitive to change and protected focal points and views.</p>	Protect and enhance valued natural and built landscapes and features within them.	<ul style="list-style-type: none"> • Maintain clear urban/rural distinction; • Enhance provision of, and access to, green space in urban areas.

Table 6.1 Strategic Environmental Objectives

6.3 Application of Strategic Environmental Objectives

A key function of developing a series of SEOs is to allow for the Draft Local Area Plan's development and zoning objectives to be assessed in relation to the significance of any effects that are likely to have on the environment. Section 8 includes an assessment of both the Draft Local Area Plan objectives and the proposed land-use zonings as presented in the plan.

Section 7 Development and Consideration of Alternatives

7.1 Introduction

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative strategies for accommodating future development in Portumna. These alternative strategies must be realistic, capable of implementation, and should represent a range of different approaches within statutory and operational requirements of the particular plan. This section identifies and describes different plan scenarios, taking into account higher level strategic actions as well as the geographical scope of the town.

7.2 Legislative Context

The development and assessment of alternatives is a legal requirement under the SEA Directive and Regulations Article 5(1) of the SEA Directive and 13E (1) of the Planning Development (Strategic Environmental Assessment) Regulations 2004 (as amended 2011) requires that the Planning Authority considers this topic within the Environmental Report. Under Article 5(1):

“Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluate. The information to be given for this purpose is referred to in Annex 1”.

Annex 1 (h) of the Directive clarifies that the information to be provided on alternatives under Article 5(1) is *inter alia* an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiency or lack of know-how) encountered in compiling the required information.

Article 9 of the Directive requires that a statement shall be prepared providing information on the reasons for choosing the plan as adopted, in the light of the other reasonable alternatives dealt with.

Annex 1 (f) details the environmental topics to be considered in the evaluation of the alternatives, which is the same as that addressed in the assessment of the plan itself:

“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”.

Therefore the Directive emphasises that the SEA process must consider alternatives that are “reasonable”, and take into account “the objectives” of the plan, and “the geographical scope of the plan”.

The SEA Statement, which is required at the end of the plan-making and SEA process, must include and summarise “the reasons for choosing the plan as adopted, in the light of other reasonable alternatives dealt with” (131(c) of the SEA Regulations).

Alternatives were formulated through consultation with the plan making team of Galway County Council and regard was to the draft *Developing and Assessing Alternatives in Strategic Environmental Assessment* – Good Practice Guidance February 2014.

The alternative scenarios are evaluated in the following sections which results in the identification of potential impacts and informing the selection of a preferred alternative for the Draft Local Area Plan. The policies and objectives which are required to realise the preferred alternative are evaluated in Section 8. Mitigation measures which attempt to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the preferred alternative are recommended for inclusion in Section 9.

7.3 Identification and Description of Alternative Plan Scenarios

7.3.1 Introduction

The following section summarises a series of “Scenarios” which provide alternative visions of how the future development of Portumna might occur. These are neither prediction’s nor preferences-instead they offer a range of plausible and internally consistent narratives of the outcome of different planning and development strategies.

A range of three potential scenarios for the types of planning strategies that could be adopted are described below, these represent increasingly intensive and extensive development. A number of features are core to all scenarios, namely the location, extent and use of lands adjoining the European sites and the requirements of lands for housing. As a result the following are key components of the alternatives:

- It is estimated that there is a requirement of 88 additional housing units by 2021;
- The housing land requirement is 9.72ha (with 50% over provision) in order to accommodate residential development over the plan period;
- Sufficient town centre lands to be provided to allow Portumna to develop;
- Sufficient employment lands to be provided to allow Portumna function as “Key Town/Other Towns” in accordance with the *Galway County Development Plan 2015-2021*;
- New residential development to be located in proximity to community facilities, educational facilities and local services;
- Phasing of Residential lands;
- The natural and built heritage of the plan area should be protected and enhanced where possible.

7.4 Alternatives Considered for SEA

The following strategic alternatives for the Local Area Plan were considered for assessment and are shown in Figures 7.1-7.3. The strengths and weaknesses of the various approaches are evaluated and a preferred alternative derived. A summary of the assessment of each alternative is included in table 7.1-7.3. The following criteria have been used in the Assessment Matrix:

	Alternative is consistent with environment goal
	Alternative is in conflict with environment goal
	Alternative is both consistent and in conflict with environmental goal
	Neutral/No Impact

7.4.1 Development Option 1 –Concentrated Development to the North-West of Plan Area

Alternative Considered				
<p>This alternative Scenario 1(see Figure 7.1) provides for a scenario whereby all future development will refrain from interfering directly or occurring immediately adjacent to environmental designations and sensitivities that transverse the existing town plan boundary. New development would occur in a concentrated manner to the north west of the plan - area. This option would limit the expansion of the town considerably and would not take due cognisance of the existing established development that has already occurred in the town.</p>		<p>B2,PHH,SG1, SG2,W1,W2,W 3,AC,M3,L</p>	<p>B1,B3,M1 M2</p>	<p>CH1,CH2</p>
<p>Population growth would be accommodated throughout the draft plan area on land zoned for a number of specific uses. Growth would be managed but there would be a lack of integration and structure to grow due to the un-coordinated manner of this alternative. Growth would become more sporadic and potentially lead to a second centre of development to the North West of the plan area. By allowing this to occur services and facilities like local shops, community facilities etc will become more sporadic in that there will be a weak settlement and community focus in which to target specific growth. This option will also lead to a lack of cohesion in the approach to town centre activity; competition with out of town retailing opportunities for existing businesses to relocate from the town centre out will continue to threat the vitality and viability of the town centre. Rural areas would be under greater risk from development and servicing growth with infrastructural services like wastewater and water supply would become more challenging and would not be cost-effective as areas closer to the town have sufficient infrastructural capacity. In relation to flood risk the areas that have been identified as Flood Zone A and B will be zoned “Open Space/Recreational Uses” and development would only be considered subject to the justification test for areas at flood risk. In addition areas that are developed but find themselves in a flood risk areas will have the “Constrained Land Use” applied to their lands which requires them to comply with the Flood Risk Assessment. This option is likely to have potential significant adverse impacts on all elements of the environment but in particular, biodiversity, water quality, landscape and in relation to the quality of life for the residents of the plan area.</p>				

Table 7.1 Development Alternative No.1

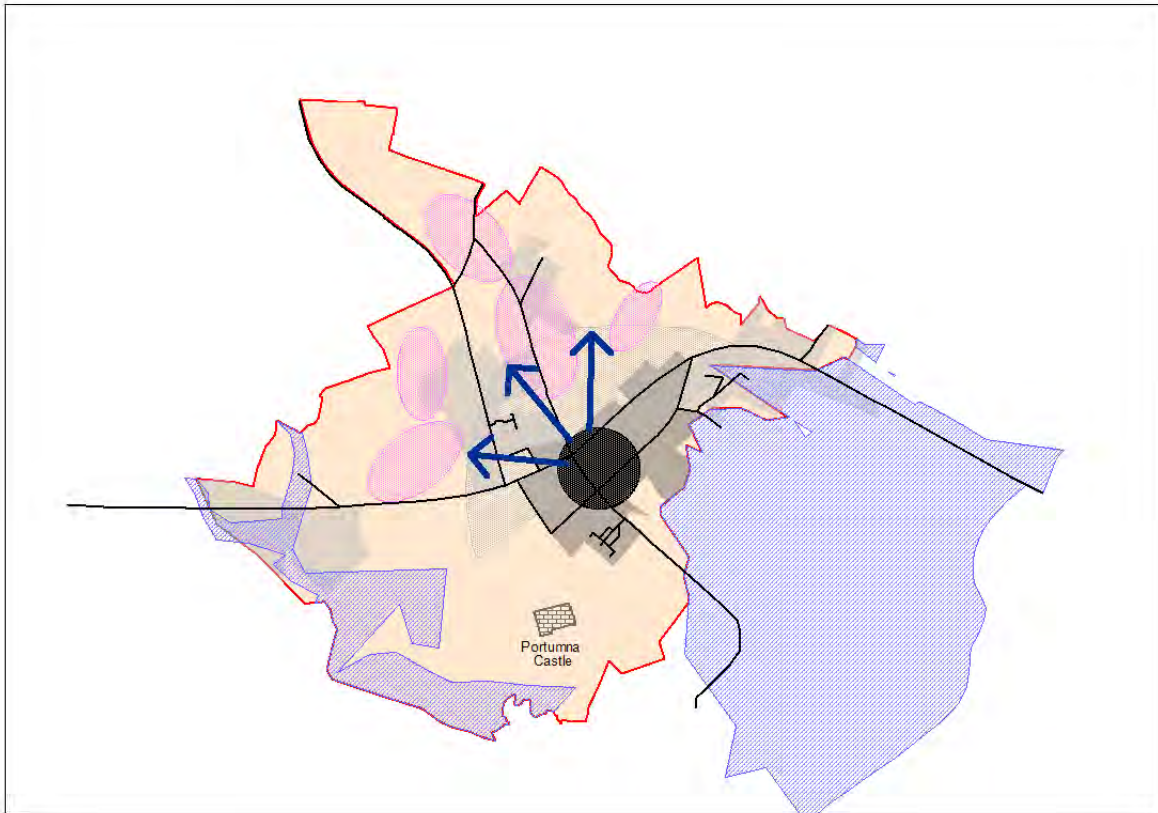


Figure 7.1 Development Option 1— Concentrated Development to the North- West of Plan Area

7.4.2 Development Option 2 –Urban Sprawl on the Arterial Routes of the Plan Area-

Alternative Considered				
<p>This Alternative Scenario No.2 (See Figure 7.2) option has the potential to materialise on spacious sites with abundance of amenity space outwards along the arterial routes serving the town. This would constitute urban sprawl and displaces development growth outwards and further away from the existing town centre to locations removed from the employment bases, school sites and general services within the town core, which will inevitably make it more difficult to encourage balanced and integrated development within the town.</p>		<p>B1,B2,B3 PHH, SG1,SG2, W1,W2,W3,AC, AC,M3,L</p>	<p>M1, M2</p>	<p>CH1,CH2</p>
<p>This alternative favours meeting the development needs of the Draft Local Area Plan through urban sprawl. This approach poses challenges in relation to the feasibility of encouraging sustainable travel options and implementing measures to encourage modal shift. The social cohesion of the existing settlements would suffer as consequences of the urban sprawl strategy. The potential with which the existing built environment and areas immediately surrounding has to offer in providing for the future needs of the draft plan would not be</p>				

prioritized and therefore not fully realised if the urban sprawl was developed. This option would also have an impact on the quality of the built environment and possible loss of biodiversity, flora and fauna if the development of urban sprawl was progressed.

Table 7.2 Development Alternative No.2

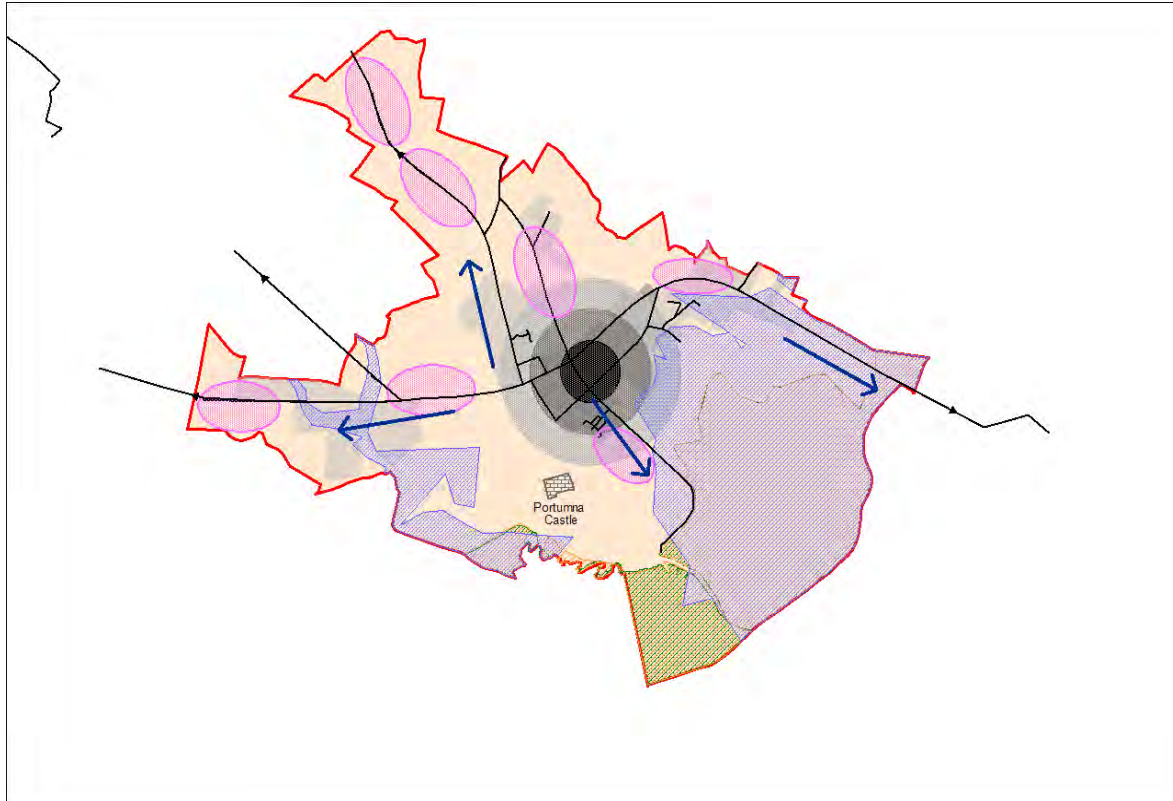


Figure 7.2 Development Option 2- Urban Sprawl on the Arterial Routes of the Plan Area

7.4.3 Development Option 3 – Consolidate Town Expansion & Promote Sequential Development with a Refined Boundary

Alternative Considered				
This scenario provides for the consolidation of the existing town centre and promotes sequential development around the town core which avoids disorderly development on the periphery. Future residential growth would be encouraged in a sequential manner from the town centre outwards. Reducing the area of the plan provides an opportunity to focus development on integrating into and establishing connectivity to the town core.	PHH,AC		B1,B2,B3, SG1,SG2,W1,W2,W3 M1,M2,M3, CH1,CH2,L	

This alternative favours meeting the development needs of the draft plan area by encouraging the coordinated expansion of the town centre and the promotion of the sequential development. This approach meets the needs of the plan area and the core strategy requirements. This option will ensure the

availability of optimal and serviceable lands in order to accommodate the anticipated growth. Consolidation of development would focus on the utilisation of vacant and under utilised lands. This strategy would focus on the principles of sustainable living and creating sustainable communities. This would be achieved by identifying specific areas that will have identified growth strategies in accordance with capacity and demand for growth. Consolidation of the urban form would facilitate and promote sustainable mobility. In order to ensure that adequate supply of land is available for a range of economic uses including business and technology, industrial greenfield sites on the periphery of the developed areas will be required resulting in expansion of the defined settlement areas. Environmental sensitivities within the draft plan would inform potential land-uses and the nature and scale of development. Where expansion is required any potential environmental impacts would be mitigated against in the plan preparation process (policies and objectives identified in the plan as a result of the SEA, AA and SFRA process). Integration of sustainable mobility, protection of amenity areas would all have potential positive cumulative effects in relation to human health and quality of life, air quality and climate change. The positive cumulative effects are achieved as a result of promoting sustainable travel patterns, protection of the natural heritage and the protection of soil through minimising development of greenfield sites and the enhancement of the built environment. Impacts on wildlife, habitats and designated sites would all have positive impacts as a result of this development option. This option will also avoid significant environmental impacts in relation to identified flood risk areas and ensure compliance with the Flood Risk Guidelines 2009 and the associated circular PL2/2014.

Table 7.3 Development Alternative No.3

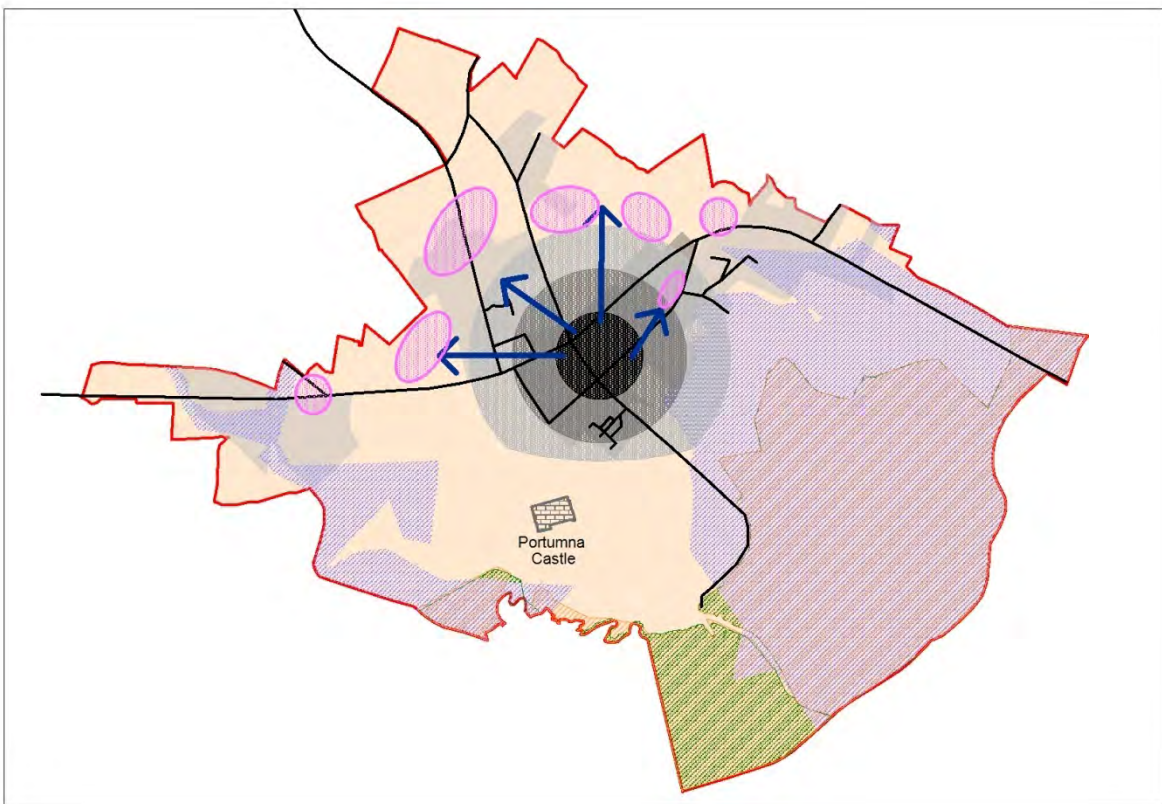


Figure 7.3 Development Option 3- Consolidate Town Expansion & Promote Sequential Development with a Refined Boundary

7.5 Evaluation of SEA Alternatives

The visual appraisal for each development alternative against the SEO objectives is shown in Table 7.4. Each alternative is mapped in Figures 7.1-7.3 and should be referred to whilst reviewing Table 7.4.

Alternative	Biodiversity, Flora and Fauna	Population, Human Health	Soil & Geology	Water	Air and Climatic Factors	Material Assets	Cultural Heritage	Landscape
1. Concentrated Development to the North-West of the Plan Area	Light Green	Red	Red	Red	Red	Light Green	Yellow	Red
2. Urban Sprawl on the Arterial Routes of the Plan Area	Red	Red	Red	Red	Red	Light Green	Yellow	Red
3. Consolidate Town Expansion & Promote Sequential Development with a Refined Plan Boundary	Light Green	Dark Green	Light Green	Light Green	Dark Green	Light Green	Light Green	Light Green

Table 7.4 Alternatives Option Scores against SEOs

7.6 SEA Preferred Alternative

Table 7.4 highlights that Alternative 3 is generally considered to be the most positive alternative when measured against the SEOs of this Environmental Report. Alternative 1 and 2 are generally considered to be more negative when reviewed in relation to the SEOs of this environmental report. Therefore the preferred SEA Alternative for the purpose of the Local Area Plan is Alternative 3.

7.7 The Preferred Alternative

The preferred Alternative as proposed under the development strategy for the Portumna Local Area Plan 2016-2022 is Alternative 3. The alternative chosen within the Portumna Local Area Plan is in accordance with preferred alternative scenario as prepared in this Environmental Report. This alternative scenario would meet a large number of the objectives of the plan as it supports the consolidation of existing developed areas and will ensure the availability of optimal residential lands to accommodate anticipated growth requirements. This alternative also encourages the development of vacant and under-utilised sites in the town and ensures that those lands close to the town are the primary focus for development, thereby placing future residents within reasonable walking and cycling distance from the town centre services and thus reducing or minimising the demand for car generated trips by providing a more sustainable and integrated transport and land-use structure.

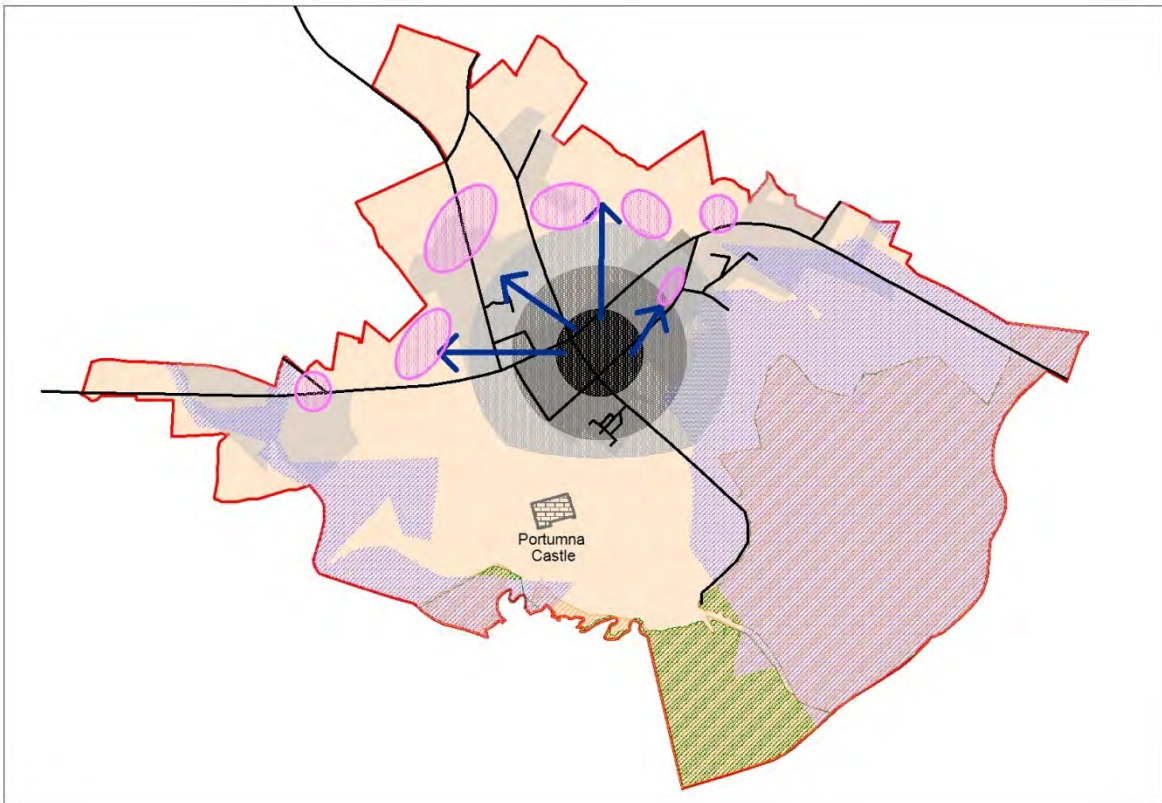


Figure 7.4 Preferred Development Option

Section 8 Assessment of Effects of Implementing the Portumna Local Area Plan 2016-2022

8.1 Introduction

The purpose of this section is a summary of the detailed assessment of the objectives and land-use zonings within the *Draft Portumna Local Area Plan 2016-2022*, which will identify where, if any effects on the environment may occur. These effects can be positive or negative effects, direct, indirect, synergistic, cumulative and/or in-combination effects.

8.2 Environmental Issues

Having established the environmental baseline and the key environmental sensitivities for the plan area in Section 3 and the Strategic Environmental Objectives in Section 6 an assessment for any potential environmental effects from implementing the plan was undertaken. The assessment carried out was primarily qualitative in nature, based on the expert judgment of the SEA/AA and plan making team. A precautionary approach was adopted in undertaking the assessment, whereby in the absence of scientific certainty, a prudent approach was taken in the protection of the Environment. An SEA Assessment Matrix is set out in the attached Appendix (I), on which the Draft Local Area Plan's development policies and objectives are listed on the one axis and the Strategic Environmental Objectives (SEOs) are listed on the other axis. Potential effects of the Draft Local Area Plan on the SEOs are determined as follows:

	Significance of Impacts
	Positive
	Negative
	Positive & Negative
	No significant relationship/Neutral/Uncertain

The SEA Assessment Matrix includes a column headed "Comments & Mitigation Measures", which describes the reasons why a negative impact has been identified and the environmental objectives that mitigate the negative impacts.

While the majority of impacts were found to be either positive, neutral or contained both positive & negative impacts, particular attention has been paid to the identification of the draft local area plan policies and objectives that conflict with some of the SEOs of the Environmental Report. All mitigation measures proposed as a result of this assessment are outlined in Section 9-10 of this report.

8.3 Overview of Evaluation of Policies and Objectives

8.3.1 Development Strategy

Development Strategy objectives aim to support orderly and sequential development which are to be consistent with the following:

- The Core Strategy of the Galway County Development Plan;
- To protect European sites and Habitats Directive;
- To implement the development management standards and guidelines as set out in Galway County Development Plan;
- To ensure that development is preceded by sufficient capacity in the public waste water and potable water infrastructure;
- To direct residential development into appropriately zoned land and serviced lands;
- To ensure that all new developments will be assessed in accordance with the provisions of the Flood Risk Management Guidelines 2009 and associated circular PL2/2014.

The policies and objectives for the Development Strategy support and facilitate the sustainable development of the plan area in line with the preferred development strategy option, Option 3- Consolidate Town Expansion & Promote Sequential Development with a Refined Plan Boundary. This

strategy maintains and enhances the quality of life of the local community, promotes opportunities for economic development, social integration, sustainable transport options, protects the cultural, built and natural heritage and environment. There is some potential for negative impacts on biodiversity, water and human health as a result of development and the requirement for population growth in line with the Core Strategy. Any new development applications in this regard will be subject to the objective DS5 which specifically relates to the sufficient capacity in the public waste water and potable infrastructure and therefore potential impacts will be minimised or mitigated at this stage.

8.3.2 Residential Development

The policies and objectives for Residential Development are generally aimed at the provision of adequate suitable housing and at a rate and scale which is in line with the core strategy of the County Development Plan and the *Portumna Local Area Plan*. These policies and objectives are expected to result in positive direct and indirect impacts to population through improvements to quality of life and ensure that there is suitable accommodation for a wide section of the population. Appropriate densities, housing mix and provision of services in relation to development of new residential developments are promoted within the section.

Policy RD1 & RD2 & Objective RD1 promotes the phasing of development and the prioritisation of phase 1 residential zoned lands within close proximity of the town centre during the lifetime of the plan. This will indirectly assist in maintaining the habitat networks and rivers in undeveloped rural areas by promoting development in the town centre and established settlement areas of the town. There is also a specific objective RD 2 which promotes sequential development of lands in an orderly and phased manner. There is some potential for negative impacts on biodiversity, water and soils; however there are sufficient policies and objectives that will ensure that these impacts are mitigated especially in Section 3.10.2, Policy NH1, Objectives NH1, NH2, NH5, NH6 & NH8. Any new development proposals in this regard will also be subject to development management requirements of the *Portumna Local Area Plan* and the Galway County Development Plan and potential impacts will be minimised or mitigated during this process.

Impacts on the human health of the local population as a result of promoting the consolidation of development within and immediate to the town centre would be positive in the promotion of walking and cycling.

8.3.3 Social and Community Development

The policies and objectives for social and community development in Section 3.3.2 are generally aimed at the provision of services and education for the community (Policy CF1, Objectives CF1, CF2, CF3, CF4, CF5, CF6 & CF7). It is considered that there would be a direct positive impact on the local population in terms of the requirement that social and community developments are located in close proximity to the residential population (Objective CF1). There will be an indirect positive impact with respect to the air and climatic factors of the town as a result of the reduction in travel related journeys due to the encouragement of the social and community developments to be in close proximity to the local residential population.

There is some potential for negative impacts on biodiversity, water and soils; however there are sufficient policies and objectives especially in Section 3.10.2 (Policy NH1, Objectives NH1, NH2, NH5, NH6 & NH8) that will ensure that these impacts are mitigated. Any new development proposals in this regard will also be subject to development management requirements of the *Portumna Local Area Plan* and the Galway County Development Plan and potential impacts will be minimised or mitigated during this process.

8.3.4 Economic Development

The policies and objectives regarding Economic Development are aimed at facilitating and encouraging tourism, retail and economic development of Portumna which would reinforce the town's designation as a Key Town/Other Towns" in accordance with the Galway County Development Plan. To achieve this and maintain the status of Portumna as the "Key Town/Other Towns" policies and objectives in Section 3.4.2 are crafted to exploit the towns location and to ensure that lands are strategically located to provide for future development. As with any new commercial and industrial related developments there is potential

for negative impacts arising, however there are sufficient policies and objectives that will ensure that these impacts are mitigated. There are sufficient policies and objectives especially in Section 3.10.2 objectives NH1, NH2, NH6, NH7 & NH8 which will ensure that these impacts are mitigated. Any new development proposals in this regard will also be subject to development management requirements of the *Portumna Local Area Plan* and the Galway County Development Plan and potential impacts will be minimised or mitigated during this process.

8.3.5 Tourism

The policies and objectives for Tourism in Section 3.5.2 are generally aimed at the provision of tourism developments (Policy T1, Objectives T1, T2, T3, T4 & T5). It is anticipated that tourism developments could have the potential to increase tourism and employment numbers which would directly have an impact on the quality of life for the local residents in that with new employment opportunities there is less time commuting to outside the area for work. The objectives in relation to the tourism potential (T2 & T3) are largely anticipated to have a positive impact on population through improving the economic prosperity of Portumna.

As with any new tourism related developments there is potential for negative impacts arising; however there are sufficient policies and objectives that will ensure that these impacts are mitigated. There are sufficient policies and objectives especially in Section 3.10.2 objectives NH1, NH2, NH6, NH7 & NH8 which will ensure that these impacts are mitigated. Any new development proposals in this regard will also be subject to development management requirements of the *Portumna Local Area Plan* and the Galway County Development Plan and potential impacts will be minimised or mitigated during this process.

8.3.6 Transport Infrastructure

A number of policies and objectives in Section 3.6.2 promotes the use of sustainable forms of transport such as walking, cycling and public transport which will all have positive impacts on the wider environment. This promotion of sustainable transport will also have positive indirect and cumulative impacts on the air and climatic factors as a result of the decrease in emissions associated with the reduction in the use of private vehicles. There are positive impacts on the quality of life for local residents and positive impacts on the material assets through the provision of improved infrastructure for users of sustainable transport modes, e.g. Public Transport, cycling and walking.

In addition, the promotion of sustainable travel with integrated land use and transportation policies should encourage the redevelopment of Portumna rather than development on sites that are not serviced by public transport or cycle/walking networks, which results in a positive direct impact on the quality of life for the residents of the plan area.

In relation to section 3.6.3 there is potential for indirect negative effects with regard to the development of new transport infrastructure with respect to biodiversity, water, soils and landscape in particular; however, it is considered that there are sufficient policies and objectives especially in Section 3.10.2 under Policy NH1, Objectives NH1, NH2, NH5, NH6 & NH8.

8.3.7 Utilities Infrastructure, Climate Change & Environmental Management

The adequacy of water, waste water and environmental services is essential for the sustainable development of Portumna. These key issues are addressed in various policies and objectives in Section 3.7.3 & 3.7.5 to provide for sufficient water, wastewater and drainage infrastructure to serve the projected growth in population that is envisaged.

In relation to Climate Change there are a number of policies and objectives that focus on climate change and green infrastructure and air quality. The promotion of improved air quality and climate change adaptation framework will result in positive direct impacts on air and climatic factors, population and human health, biodiversity and material assets.

In section 3.7.9 there are a number of policies and objectives that ensure that the avoidance of development in flood risk areas as identified on Map 3A. There are a number of objectives (FL1, FL2, FL3

& FL4) that will result in positive direct impacts on water, population and human health, soils and biodiversity.

In section 3.7.10 there are a number of policies and objectives that specifically relate to the provision of waste management. The policies and objectives in relation to waste management will generally have positive direct and indirect impacts through the provision of recycling facilities throughout the plan area which will benefit biodiversity, flora and fauna, human health, soils, air & climatic factors, landscape and material assets.

8.3.8 Telecommunications, Energy Infrastructure & Renewable Energy

The provision of telecommunications and energy infrastructure within the plan area will have direct and indirect positive impacts on population by improving the quality of life for the residents of Portumna.

In Section 3.7.13 the provision of energy infrastructure, renewable energy and telecommunications ensures that existing and future telecommunication requirements of the town are planned in an environmentally sustainable manner for the duration of the plan period.

8.3.9 Urban Design and Landscape

The protection of the built environment and the recognition of the requirement of high quality, and sensitive design of buildings within Portumna are outlined in Section 3.8.1. The importance of Portumna townscape qualities which are derived from its historic urban structures are noted throughout the Local Area Plan. Policy UD1 and objectives (UD1, UD2, UD3, UD4, UD5, UD6 & UD6) support the urban fabric of Portumna and these objectives will result in positive direct impacts on population and human health, material assets and cultural heritage.

In relation to landscape there is a positive presumption in the promotion of the landscape character, values, sensitivities and views within the plan area. The objective in relation to Landscape (UD 7) will result in positive direct impacts on population and human health, material assets and the landscape itself.

8.3.10 Built Heritage and Cultural Heritage

The built heritage should be carefully considered in any such proposed developments. The consolidation and expansion of the town centre is primarily expected to result in positive impacts as these could result in the redevelopment of brownfield lands, thereby protecting soils, water and biodiversity and population from cumulative impacts of new developments. There can also be instances where development and intensification of construction may have indirect impacts in terms of placing pressure on soils, water and biodiversity. However it is considered that the integration of the policies and objectives in Section 3.9.2 would be expected to reduce indirect negative impacts on other receptors.

The protection and enhancement of Portumna towns built heritage is central to the Local Area Plan. The policies and objectives for cultural, architectural and archaeological heritage will generally be positive through the protection and preservation of the cultural heritage.

8.3.11 Natural Heritage and Biodiversity

The importance of green infrastructure and ecological networks is recognised within the plan area. There is a designated ecological site within the plan area, policies and objectives ensure the protection of this designated site. In addition to this designated site there is also proposed natural heritage areas within the plan area, policies and objectives are also set out to ensure that these sites are also protected. The policies and objectives in Section 3.10.2 for natural heritage and biodiversity for the *Portumna Local Area Plan* will generally be positive for biodiversity as it aims to protect and promote opportunities for enhancement of local biodiversity features throughout the plan area. It is considered that there will be indirect positive impacts on water and soil as the protection, conservation and enhancement of biodiversity is expected to also result in protection of these resources.

The policies and objectives in this section are expected to result in largely positive direct and indirect impacts to population through the improvements to the quality of life. It is considered that there will be indirect positive effects in relation to biodiversity and landscape.

8.3.12 Overview of Evaluation of Land Use Zoning Objectives

The Portumna Local Area Plan 2016-2022 provides a development framework to guide the development for the next six years. As part of the development framework, one of the key principles to this approach as set out in the Portumna plan is to achieve consolidated growth rates over the short to medium term through development of residential, employment, cultural, retail and educational facilities. The framework for the plan is outlined on Map 1A and Map 1B of the Portumna plan and associated land use zoning objectives. Figure 8.1 illustrates the proposed land use map as contained in the Draft Local Area Plan and Figure 8.2 illustrates the comparison between the land use zoning as adopted under the 2005-2011 Local Area Plan and the Draft Local Area Plan 2016-2022. The purpose of land use zoning is to indicate to property owners, and to the general public, the types of development that the Council considers most appropriate in each zone.

Land use zoning objectives are provided for with respect to the following uses:

- Town Centre/Commercial;
- Commercial/Mixed Use;
- Residential Phase 1;
- Residential Phase 2;
- Industrial;
- Business & Enterprise;
- Tourism;
- Community Facilities;
- Environmental Management;
- Open Space/Recreation & Amenity;
- Public Utilities;
- Transport Infrastructure.

Town Centre/Commercial

Lands zoned for town centre uses are generally considered to be quite positive with respect to population, climate change and material assets as they promote the consolidation and improvement of these areas and provision of services in close proximity to same. This will have indirect positive effects on landscape due to the promotion of vacant lands and underutilized sites which will have a net positive effect through reduction in development on greenfield lands.

Commercial/Mixed Use

Lands zoned for commercial/mixed use are generally considered to be quite positive with respect to population and material assets as they promote the consolidation and improvement of these areas and provision of services in close proximity to same. This will have positive effects on landscape due to the promotion of vacant lands and underutilised sites within the town centre.

Residential Phase 1

Undeveloped lands zoned for new residential development during the lifetime of the plan are zoned R-Residential in Map 1A of the Portumna Local Area Plan. These undeveloped zoned lands include lands which have the benefit of planning permission and have not yet been developed. R-Residential (Phase 1) zoned lands also include residentially zoned lands identified as part of the development strategy for the *Portumna Local Area Plan* which will aim to deliver the Core Strategy allocations as set out in the Galway County Development Plan. Phase 1 lands are strategically located in close proximity to existing residential and business/commercial developments.

Residential Phase 2

Map 1A of the Portumna Plan makes provision for residentially zoned Phase 2 lands under zoning R2. These undeveloped lands are reserved for the longer term growth needs of the town and are generally located in more peripheral areas to the north and east of the town. These lands will not normally be eligible for development during the lifetime of this Plan. However, consideration will be given to single house developments for family members on family owned lands or where it is apparent that Residential (Phase 1) lands cannot or will not be developed within the plan period. These lands may accommodate

residential units however compliance with the core strategy is required and the principles of proper planning and sustainable development will also be required.

The phased development of lands for residential use in accordance with Map 1A will have an overall beneficial effect on population, climate change, landscape and material assets as residential development will be developed in a planned, phased and serviced manner. This would result in high quality living environments; it promotes sustainable transport, walking and cycling and will reduce potential effects on landscape from otherwise sprawling developments throughout the environs of the town.

As with all new developments on greenfield sites, there is potential for negative effects on biodiversity, water and soils. However, it is anticipated that any potential mitigation measures would be offset or mitigated against through the normal development management process which is likely to offset any significant impacts associated with development of these lands.

Industrial

Objectives for the development of Industrial lands are anticipated to have a positive direct impact on population and material assets as these land uses will help to reinforce the town's designation as the "Key Towns/Other Towns" under the Core Strategy of the County Development Plan. The zoning of these lands provides an opportunity to increase employment in these areas and as a result has a direct positive impact on the quality of life for those living in Portumna.

Zoning of Industrial lands to the north and west of the plan area in close proximity to the town centre is in line with the Local Area Plan's development strategy which supports the use of public transport and walking and cycling and will as a result reduce impacts on climate change. Secondary positive impacts on population, climate, landscape and material assets as these objectives would be expected to discourage sprawl of these uses in an unregulated manner throughout the town.

As with all new developments, there is the potential for in combination effects (along with other developments planned for the town) to have impacts on biodiversity, soil, water and landscape through pressure on wastewater systems, water supplies and through development of greenfield lands. However, any new developments on these lands would be subject to the normal development management process which is likely to offset any significant impacts associated with development of these lands.

Business and Enterprise

Objectives for the development of Business and Enterprise lands are anticipated to have a positive direct impact on population and material assets as these land uses will help to reinforce the town's designation as the "Key Towns/Other Towns" under the Core Strategy of the County Development Plan.

The zoning of these Business and Enterprise lands which are in close proximity to existing residential lands and which are within easy access of the town centre supports the use of public transport, walking and cycling and will as a result reduce impacts on climate change. Secondary positive impacts will also occur on population, climate, landscape and material assets as these objectives would be expected to discourage sprawl of the business and enterprise uses in an unregulated manner throughout the town.

Community Facilities

The aim of the land use zoning objective for community facilities is to protect and provide for the development of schools, community and educational facilities. It is anticipated that this land use zoning objective would have an overall positive effect on population as it would improve educational and community facilities serving the public. As with all new developments there is potential to impact on biodiversity, soils, landscape and water through the development of greenfield lands. However, any new development would be subject to development management requirements of the Portumna Plan and the *Galway County Development Plan*.

Environmental Management

Objectives for the development of Environmental Management lands relate to lands that have a high biodiversity value and/or environmental sensitivities which include the protection of the integrity of

European sites that form part of the European sites. It is anticipated that this land use will have a positive direct impact on population, biodiversity and material assets. This land use objective is expected to result in direct positive impacts to biodiversity. Positive and secondary impacts are also likely to occur in the areas of soil and water due to the controls that would be placed on development as a result of implementation of this objective.

Tourism

The aim of this land use zoning objective is to protect and provide for the development of tourism facilities. It is anticipated that this land use zoning objective would have an overall positive effect on population as it would improve the provision of tourism facilities within the town. As with all new developments there is potential to impact on biodiversity, soils, landscape and water through the development of greenfield lands. However, any new development would be subject to development management requirements of the *Portumna Local Area Plan* and the *Galway County Development Plan*.

Open Space/Recreation & Amenity

The land use objective for Open Space/Recreation and Amenity aims to retain and protect existing open space and recreational facilities and uses and to protect these lands from urban sprawl and ribbon development. Additionally, these lands are zoned to ensure that any flood risk areas within the OS zone are appropriately managed to avoid, reduce and/or mitigate, as appropriate, the risk and potential impact of flooding.

This land use objective will have an overall positive effect with respect to population and climate change. It will help to maintain the quality of people's lives through high quality environments and providing recreational areas which may indirectly have positive effects on people. This land use objective is expected to result in direct positive impacts to biodiversity. Positive and secondary impacts are also likely to occur in the areas of soil and water due to the controls that would be placed on development as a result of implementation of this objective.

Public Utilities

The land use objective for public utilities aims to facilitate the provision and maintenance of essential public utility infrastructure, together with necessary ancillary facilities and uses, as appropriate. Zoning of lands for public utilities is necessary to take account of existing wastewater treatment within the boundary of the plan area. This zoning provides lands for improvements to existing wastewater infrastructure and therefore has the potential to provide positive impacts on population, biodiversity and water quality. However, as with all new developments, development within public utilities zones have potential for impacts on biodiversity, soil, water and landscape through construction activities and development of greenfield lands. However, any new developments on these lands would be subject to the normal development management process which is likely to offset any significant impacts associated with development of these lands.

Constrained Land Use Zone (CL) (Refer to Maps 1A/1B)

The land use zoning for constrained land use applies to developed areas that are located within a flood risk area. The underlying zonings or the existing permitted uses are deemed to be acceptable in principal for minor developments to existing buildings subject to normal planning and flood risk assessment (such as small extensions to houses, most changes of use of existing buildings). This land use objective will have overall positive effects with respect to population and human health which would help to maintain the quality of people's lives through high quality environments and ensuring that the flood mitigation measures are considered fully which will directly have positive effects on people and their property.

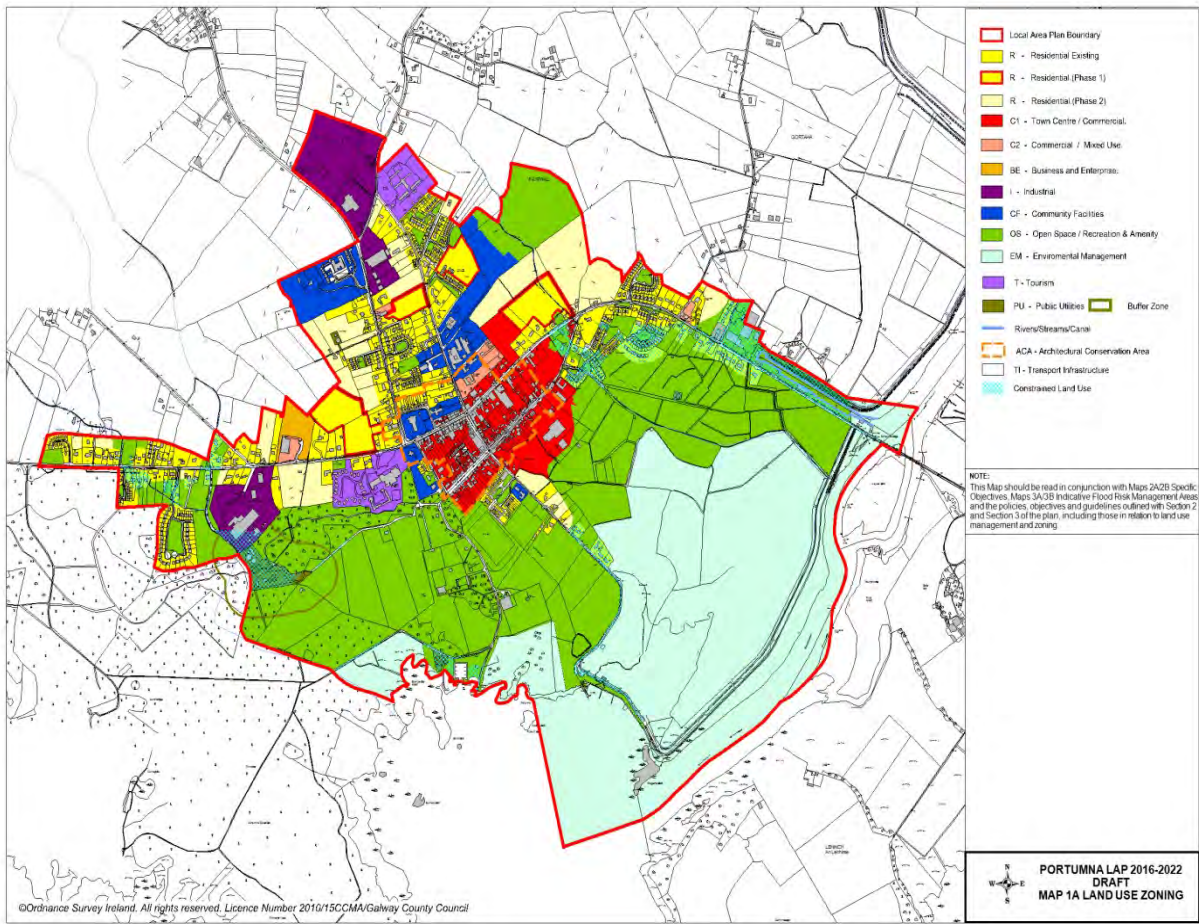


Figure 8.1 Draft Portumna Local Area Plan Land Use Zoning

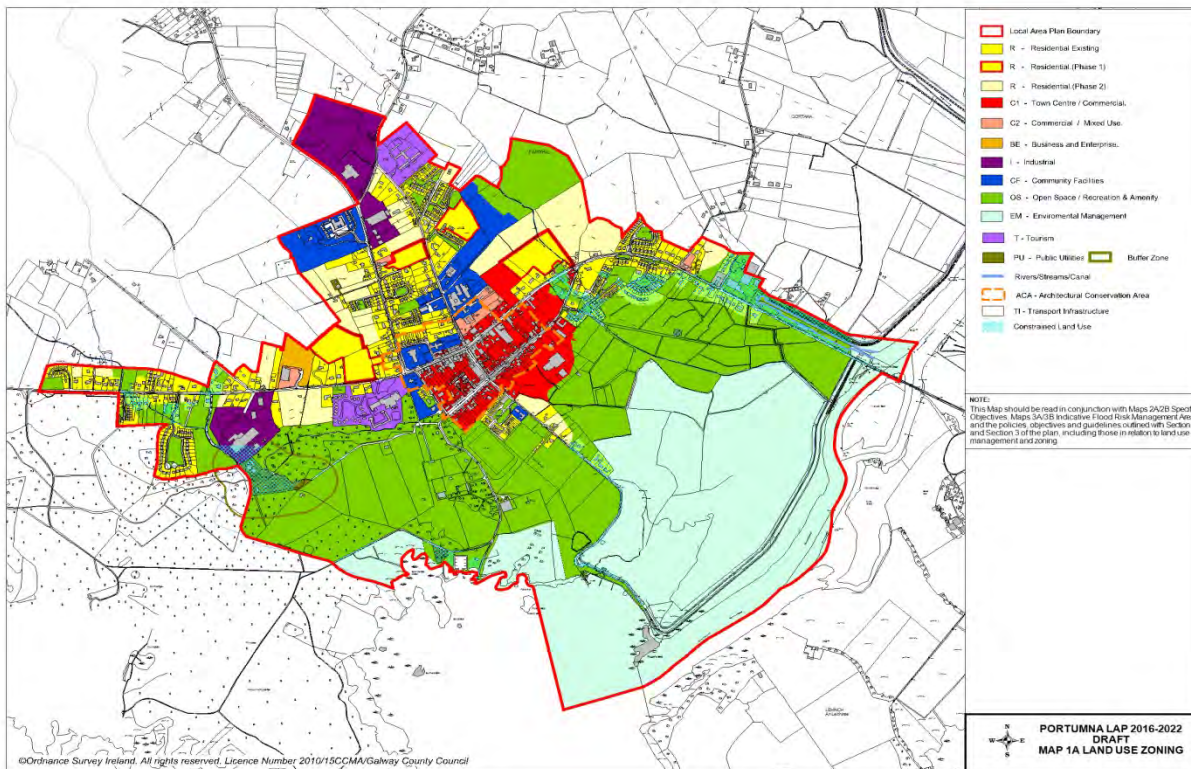
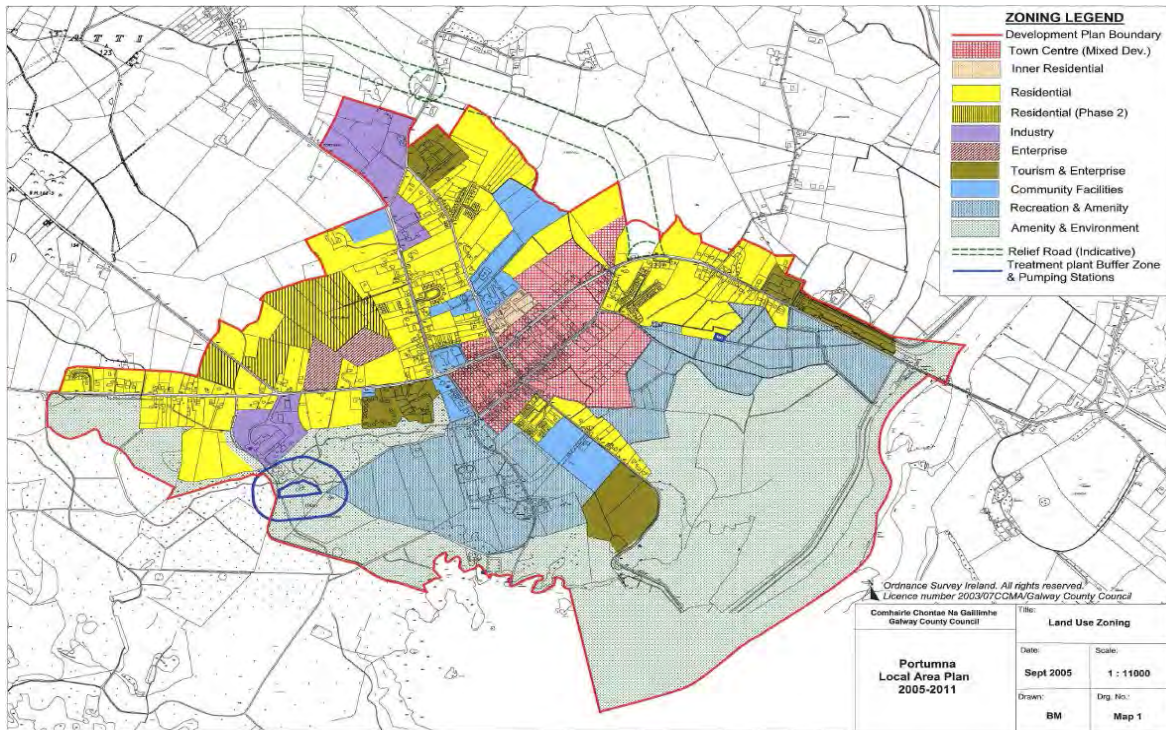


Figure 8.2 Comparison of Land Use Zoning Map 2005-2011 & Draft Portumna Local Area Plan 2016-2022 Land Use Zoning Map.

8.4 Cumulative/In-combination Effects

Cumulative effects are defined as “effects on the environment that result from incremental changes caused by the strategic action together with other past, present and reasonably foreseeable future actions” (EPA SEA Process Checklist (2011)). In considering cumulative effects it recognises that although effects of an action may be insignificant individually, that cumulatively over a period of time there could be consequent negative environmental effects and impacts. The assessment of cumulative effects is a requirement of the SEA Directive (2001/42/EC).

Potential cumulative and in-combination effects of the *Draft Portumna Local Area Plan 2016-2022* have been assessed as follows:

- An assessment against other Plans and Programmes; and
- An assessment of the cumulative effects from development arising from the implementation of the Plan.

8.4.1 Legislation

The consideration of cumulative effects is a requirement of the SEA Directive (2001/42/EC). It states under Article 5(1) that an Environmental Report shall be prepared and relevant criteria is provided in Annex I, which states that;

“The likely significant effect (these effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects) on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors”.

Under Article 3(5) of the SEA Directive the determination of likely significant effects is addressed and within this it is stated that Member States shall take into account the relevant criteria within Annex II. Under Annex II (2) it is stated that “characteristics of the effects and of the area likely to be affected, having regard, in particular, to the cumulative nature of the effects”.

8.4.2 Assessment against Other Plans and Programmes

The Draft Portumna Local Area Plan 2016-2022 complies with the National Spatial Strategy 2002-2020, the Regional Planning Guidelines for the West Region 2010-2022, Our Sustainable Future – A Framework for Sustainable Development for Ireland (2012) and the National Development Plan 2007-2013 as superseded by the Department of Public Expenditure and Reform document entitled “Infrastructure and Capital Investment 2012-2016”. In accordance with the *Planning and Development Act, 2000(as amended)* all development proposals must be consistent with the objectives of these higher-level plans and guidelines.

The Core Strategy set out in the County Development Plan provides the policy framework for the Draft Local Area Plan which is in compliance with the Regional Planning Guidelines for the West Region 2010-2022.

The Core Strategy set out in the *Galway County Development Plan* provides the policy framework for the Local Area Plan which is in turn in compliance with the *Regional Planning Guidelines for the West Region 2010-2022*. All Regional Planning Guidelines were subject to Strategic Environmental Assessment to assess the potential significant environmental effects of their implementation, in accordance with national and European legislation.

The County Development Plan sets out the strategy for the proper planning and sustainable development of the county which was subject to Strategic Environmental Assessment including the assessment of cumulative effects with regard to the county.

The Draft Portumna Local Area Plan 2016-2022 presents the strategy for the plan area and it must be in compliance with the *Galway County Development Plan*.

An assessment against these and other relevant plans and programmes are set out below.

Table 8.1 In –combination Effects with Other Plans and Programmes

Policy, Plan or Programme	Summary of Objectives	Possible Impacts	Risk of significant “in combination” effects with Draft Local Area Plan
Regional Planning Guidelines for the West Region 2010-2022,	The Guidelines seek to ensure a proper balance between settlements in the region with regard to development, population and services. The Guidelines also set out the population targets for the County	No significant environmental impacts including on European sites either within or outside the Plan area as the plan has been subject to SEA and Appropriate Assessment.	No
Galway County Development Plan	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve Galway’s infrastructural requirements.	No significant environmental impacts including on European sites either within or outside the Plan area as the plan has been subject to a full SEA and AA/NIR.	No
Tuam Local Area Plan 2011-2017	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Loughrea Local Area Plan 2012-2018	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Oranmore Local Area Plan 2012-2018	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Gort Local Area Plan 2013-2019	This plan aims to facilitate the sustainable	No significant impacts as the plan has been	No

	development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	subject to SEA and AA requirements.	
Athenry Local Area Plan 2012-2018	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Craughwell Local Area Plan 2009-2015	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Draft Ballinasloe Local Area Plan 2015-2021	This plan aims to facilitate the sustainable development of the county, to conserve the natural and built environment of the county and to improve its infrastructural provision.	No significant impacts as the plan has been subject to SEA and AA requirements.	No
Galway County Heritage Plan 2010-2016	The plan places heritage at the heart of the life of the County through increasing awareness, enjoyment, knowledge and understanding of the shared heritage which aims to ensure the proper management and protection and safeguarding for future generations.	No significant impacts within or outside plan area.	No
Shannon International River Basin District	To protect and enhance surface and groundwater resources and to achieve at least Good Ecological Status in all waterbodies by 2015.	No significant impacts within or outside plan area.	No

Table 8.1 In –combination Effects with Other Plans and Programmes

8.4.3 Assessment of Cumulative Effects of Portumna Local Area Plan 2016-2022

The assessment process has identified a number of issues which have potential cumulative effects and these include:

Loss of Biodiversity and Flora and Fauna - potential for negative cumulative effects arising from the replacement of semi-natural land covers with artificial surfaces.

Mitigation –To ensure that any proposals for development seek to retain or incorporate natural features into their proposals as set out in the Draft Local Area Plan.

Loss of Trees, Parklands, Woodland and Hedgegrow - There is potential for long-term negative cumulative effects as a consequence off removal of hedgerow, trees as a result of development, which would pose threats to wildlife habitat and commuting corridors and qualifying interests of European sites.

Mitigation - Requirement to protect hedgerows and trees and if removed compensatory planting is required as outlined in objective NH10 of the Local Area Plan.

Loss of Stonewalls – There is potential for the loss of stone walls along St. Josephs Road

Mitigation – Requirements to protect the stone walls under objective UD 9 of the Local Area Plan.

Loss of Habitats - Due to the disturbance to bird species there is potential for new transportation networks to impact riparian zones and affect European sites and species

Mitigation - Any new linear projects such as trails, greenways or cycle tracks will be subject to Appropriate Assessment.

Section 9 Mitigation Measures

9.1 Introduction

Annex 1 (g) of the SEA Directive requires that the Environmental Report describes the measures envisaged to prevent, reduce and/or offset as fully as possible any significant adverse effects on the environment from implementation of the Local Area Plan. While this section is largely focused on key mitigation measures that should be included in the Local Area Plan, in some cases recommendations are made as to issues that should be considered during the planning process during the lifetime of the Plan. A detailed assessment of policies and objectives within the Plan has been undertaken and proposed mitigation is presented in Table 9.1.

In the preparation of the *Draft Portumna Local Area Plan 2016-2022*, the SEA and AA processes ran in parallel and the iterative nature of the SEA process in particular has informed and influenced the formulation of the policies, objectives and land-use zonings. A detailed assessment of both the plan objectives and land-use zonings is undertaken in Section 8 of this report. Where mitigation measures were still considered necessary, this resulted in either amendment or addition to wording, inclusion of additional objectives or additions/amendments/removal in the explanatory sub-text of the draft plan. The recommended mitigation measures for the plan objectives are set out in Table 9.1 (indicated in **green font**) and column two of the table indicates whether the measures were incorporated into the Plan.

Table 9.1 Mitigation Measures Proposed as a Result of Assessment of Policies and Objectives

SEA Recommendations and Suggested Mitigation	Change to the Draft Local Area Plan
<p>Objective LU 1 – Town Centre/Commercial (C1) (Refer to Map 1A/1B) Promote the sustainable development of the Town Centre as an intensive, well connected, high quality, well-landscaped, human-scaled and accessible environment, with an appropriate mix of uses, including residential, commercial, service, tourism, enterprise, public and community uses as appropriate, that provides a range of retail services, facilities and amenities to the local community and visitors to the town. The town centre and associated main streets shall remain the primary focus for retail and service activity within Portumna.</p>	Wording accepted as proposed.
<p>Objective LU 2 – Commercial/Mixed Use (C2) (Refer to Map 1A/1B) Promote the sustainable development of commercial and complimentary mixed uses, on suitable lands that can provide focal points for the provision of services to surrounding neighbourhoods/areas and opportunities for commercial enterprises, retail developments and employment creation and which do not undermine the vitality and viability of the town centre.</p>	Wording accepted as proposed.
<p>Objective LU 3 – Residential (R) (Refer to Map 1A/1B & Objective RD1) Promote a phased, sequential approach on Residential zoned lands, with a strong emphasis on consolidating existing patterns of development, encouraging infill opportunities and promoting sustainable transport options.</p>	Wording accepted as proposed.

<p>It is an objective to:</p> <p>(a) Promote the development of appropriate and serviced lands to provide for high quality, well connected and well laid out and landscaped sustainable residential communities with an appropriate mix of housing types and densities, together with complementary land uses such as community facilities, local services and public transport facilities, and sustainable transport options to serve the residential population of the area and the surrounding environment;</p> <p>(b) Protect existing residential amenities and facilitate compatible and appropriately designed new infill development, in accordance with the proper planning and sustainable development of the area.</p>	
<p>Objective LU 4 – Industrial (I) (Refer to Map 1A/1B)</p> <p>Promote the sustainable development of industrial and industrial related uses, including manufacturing, processing of materials, warehousing and distribution on suitable lands, with adequate services and facilities and a high level of access to the major road networks and public transport facilities.</p> <p>Adequate perimeter treatment and/or screening will be required to ensure high quality interfaces with public spaces and any adjoining residential areas or other sensitive land uses, as appropriate.</p>	Wording accepted as proposed.
<p>Objective LU 5 – Business & Enterprise (BE) (Refer to Map 1A/1B)</p> <p>Promote the sustainable development of business and enterprise uses, light industry/warehousing and the facilitation of enterprise park/office park type uses, incubation/start-up units and Small Medium Enterprises, on suitable lands with adequate services and facilities and with a high level of access to the major road networks and to public transport facilities.</p>	Wording accepted as proposed.
<p>Objective LU 6 – Community Facilities (CF) (Refer to Map 1A/1B)</p> <p>Promote the sustainable development of community facilities on suitable lands, with a high level of access to the local community, including educational, community, civic, public, institutional, recreational, cultural and other complementary uses, as appropriate.</p>	Wording accepted as proposed.
<p>Objective RD 2 – Sequential Development Endeavour to promote the orderly and phased development of residential development in accordance with the principles of the sequential</p>	Wording accepted as proposed.

<p>approach as set out in the <i>Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) Guidelines 2009</i> (or as updated). This shall include a positive presumption in favour of the sequential development of suitably serviced R- Residential (Phase 1) lands emanating outwards from the town core and/or sequential extensions to the existing residential fabric of suitably serviced R- Residential (Phase 1) lands within the LAP boundary, subject to the principles of proper planning and sustainable development and the current <i>County Development Plan</i>. This objective shall not refer to single house build.</p>	
<p>Objective CF 8 – Amenity Network Support the establishment of an accessible and sustainable network of greenway linkages and amenities that provide safe and attractive circulation routes for pedestrians and cyclists for the enjoyment and recreational use of the entire community. This network should link together community facilities, amenities and built heritage features in the plan area and surrounding areas. Galway County Council will subject to compliance with the Habitats Directive seek to promote the functioning of greenway networks as wildlife corridors and habitats to enhance the biodiversity and the natural environment.</p>	<p>Wording accepted as proposed.</p>
<p>Objective CF 9 – Riverside Networks Encourage and support the sustainable development of riverside walkways and cycleways throughout the plan area where feasible and incorporate same into the development of adjoining lands of the marina, streams, woods and the demesne of Portumna Castle, as appropriate. Any potential impacts on natural heritage and designated conservation areas arising from such networks will be duly considered in accordance with the Habitats Directive as part of any proposal.</p>	<p>Wording accepted as proposed.</p>
<p>Objective ED 5 – Town Centre Viability, Vitality & Vacancy Ensure a balance of development in the retail core of Portumna town so as to ensure that the main streets, St. Brendan’s Street, Clonfert Avenue and St. Patrick’s Street are revitalised, retail/commercial vacancies rates are reduced and that an unbalanced retail pull away from this area is avoided.</p>	<p>Wording accepted as proposed.</p>
<p>Objective ED 6 – Brownfield Development and Vacancy Encourage the redevelopment of existing brownfield sites within the plan area in order to maximize the sustainable regeneration of underutilised/vacant lands and/or buildings for potential commercial, retail and residential developments.</p>	<p>Wording accepted as proposed.</p>

<p>Green Infrastructure</p> <p>Green infrastructure can be defined as networks of green areas that provide multiple environmental, social, educational and economic benefits to society and can include open spaces, woodlands, parks, farmland and private gardens. The environmental benefits of identifying a green infrastructure network cannot be underestimated as the protection of natural features like flood plains, wetlands, woodlands and hedgerows provide far-reaching benefits, e.g. in climate change adaptation. Developing a green infrastructure approach can assist with the loss of biodiversity while enhancing an environment in which we live and thereby creating a high quality environment. Comhar Sustainable Development Council publication (2010) “<i>Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing</i>’ sets out how a network of green spaces can be developed to benefit natural heritage and biodiversity as well as the greater economy and society.</p> <p>Invasive Species</p> <p>Non-native species both animal and plants can represent a major threat to local, regional and global biodiversity. Terrestrial and aquatic habitats can be negatively affected, resulting in significant damage to conservation and economic interests such as agriculture, forestry and civil infrastructure. The <i>Third Schedule of European Communities (Birds & Natural Habitats) Regulations, 2011</i> lists restricted non-native species and Regulation No.49 and No. 50 specifically relate to recognised invasive species.</p> <p>Development proposals must ensure that the presence or absence of invasive alien species has been addressed in accordance with the new European Regulations for the prevention and management of the introduction and spread of Invasive Alien Species (1st Jan 2015) and the EC (Birds and Habitats) Regulations 2011. Where invasive alien species are present on a development site an Invasive Alien Species Management Plan will be required.</p>	<p>Wording accepted as proposed.</p>
<p>Objective NH 12 - Control of Invasive and Invasive Alien Species</p> <p>Seek to prevent the spread of invasive, and alien invasive alien species and noxious weeds and require a landscaping plan to be produced for developments near water bodies and ensure that such plans do not include invasive species.</p>	<p>Wording accepted as proposed.</p>

Section 10 Monitoring

10.1 Requirement for 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. 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 Strategic Environmental Objectives, Indicators and Targets. The Strategic Environmental Objectives, Indicators and Targets for the various environmental topics are set out in Table 10.1. The indicators that are used will show changes that would be attributable to the implementation of the Local Area 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 the EPA, NPWS and OPW.

Monitoring proposals must concentrate on likely significant environmental effects, as 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.

10.2 Responsibilities and Frequency of Reporting

The statutory Chief Executive’s Report on progress in achieving objectives of the Local Area Plan, takes place two years after the adoption of the 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 a policy or an objective is resulting in a significant adverse effect then a variation may be considered during the lifetime of the Local Area Plan. It is largely the responsibility of Galway County Council to undertake the monitoring and to interpret the monitoring data relevant to Portumna and to deal with unforeseen effects as a result of implementing the *Portumna Local Area Plan 2016-2022*.

Environmental Component	SEO Objectives	Target	Indicator	Source/Responsibility
Biodiversity, Flora and Fauna	<p>B1: To ensure compliance with the Habitats and Birds Directive with regard to the protection of European sites and Annexed habitats and Species¹⁶;</p> <p>B2: To ensure the protection, conservation to avoid the loss of diversity and integrity of a broad range of habitats, species and ecological and wildlife corridors and networks (non-designated sites) which provide connectivity between areas of local biodiversity within the <i>Draft Portumna Local Area Plan</i>;</p> <p>B3: Conserve and protect other sites of Nature conservation including NHAs and pNHAs.</p>	<p>B1: Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan¹⁷;</p> <p>B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan;</p> <p>B3: No net loss of habitat and species.</p>	<p>B1:No significant negative impacts on designated habitats and species of the SPA;</p> <p>B2:Habitat Loss e.g. loss of hedgerow, loss of mature trees, treelines, wooded areas and stone walls; No loss of locally rare species/habitats; No net loss of green linkages/ecological networks especially rivers;</p> <p>B3: Habitat quantity and quality of species.</p>	<ul style="list-style-type: none"> Galway County Council; National Parks and Wildlife'.
Population, Human Health	<p>PHH To protect human health from hazards or nuisances arising from exposure to incompatible land uses.</p>	<p>PHH: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan.</p>	<p>PHH: Number of newly constructed developments Population Equivalent input to WWTP;</p> <p>Also see Water and Biodiversity Indicators.</p>	<ul style="list-style-type: none"> Galway County Council.
Soil & Geology	<p>SG1:To prevent pollution and/or contamination of soil;</p> <p>SG2: Conserve, protect and avoid loss of diversity and integrity of designated habitats, geological features, species or their sustaining resources in designated ecological sites.</p>	<p>SG1 & SG2: To minimise reductions in soil extent and hydraulic connectivity;</p> <p>SG1 & SG2: Limit residential development to phase 1 lands.</p>	<p>SG1 & SG2: Area of soil where function and quality is compromised e.g. where soil sealing occurs;</p> <p>SG1 & SG2:Limit net loss of groundwater recharge capability through loss of permeable soil resource.</p>	<ul style="list-style-type: none"> Galway County Council; Environmental Protection Agency.
Water	<p>W1: To maintain and improve, where possible, the status of surface waters;</p> <p>W2: To prevent pollution and</p>	<p>W1 To improve Biotic Quality Rating (Q Values) and Risk Assessment of Water Bodies;</p>	<p>W1:The Biotic Quality Rating;</p>	<ul style="list-style-type: none"> Galway County Council; Environmental Protection Agency.

¹⁶ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

¹⁷ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

(a) no alternative solution available;

(b) imperative reasons of overriding public interest for the plan to proceed; and

(c) adequate compensatory measures in place.

	contamination of ground water;	<p>W2 No reductions in the Q value in relevant water courses; No change or Improvement in groundwater quality associated with development;</p> <p>% increase in waters achieving “good status” as defined by WFD;</p> <p>W3 To comply as appropriate with the Provisions of the <i>Planning System and Flood Risk Management Guidelines for Planning Authorities (DEHLG,2009) and associated Circular PL 2/2014.</i></p> <p>W3 No new development in Flood Zone A Developments proposed with Flood Risk Zones to comply with Floods Directive;</p> <p>SUDS in all new developments.</p>	<p>W2 Risk Assessment. Implementation of the Programme of Measures identified under the SERBD River Basin Management Plan; Ensure wastewater collection system capacity is provided either prior to construction of new development or is developed in parallel;</p> <p>W3 Number and area of developments within Flood Risk Zones Ensure that there is no development granted on lands which are outlined in the flood risk assessment as not suitable for development.</p>	
Air and Climatic Factors	AC: To reduce travel related greenhouse emissions to air and to encourage modal change from car to more sustainable forms of transport.	<p>AC Reduce Greenhouse gas emissions in line with 2020 commitments;</p> <p>% Increase in number of people travelling to work and school via public transport.</p>	<p>AC All new development applications within areas at risk of flooding to be accompanied by Flood Risk Assessment;</p> <p>Increase access by households to public transport, including bus and rail services;</p> <p>Increase number of people travelling to work and school via public transport.</p>	<ul style="list-style-type: none"> Galway County Council.
Material Assets	<p>M1: To serve new development with adequate and appropriate waste water treatment;</p> <p>M2: To serve growth areas with drinking water that is both wholesome and clean;</p> <p>M3: Make the best use of existing road and transportation infrastructure.</p>	<p>M1: % Compliance in wastewater discharges from municipal treatment;</p> <p>M2: % Compliance in potable water quality monitoring;</p> <p>M3: Increase in population in urban areas.</p>	<p>M1: % compliance in wastewater discharges from municipal treatment;</p> <p>M2:% compliance in potable water quality monitoring;</p> <p>M3:Maximise development potential within urban envelope in order to reduce travel.</p>	<ul style="list-style-type: none"> Galway County Council.
Cultural Heritage	CH1: To protect the archaeological heritage of the town including entries	CH1: Ensure that the culture heritage of the town is	CH1: % of Protected Structures ‘at risk’;	<ul style="list-style-type: none"> Galway County Council; Buildings at Risk Register,

	<p>to the Record of Monuments and Places and/or their context and Architectural Conservation Areas;</p> <p>CH2: To preserve and protect the special interest and character of the town's architectural heritage.</p>	<p>maintained and protected from damage and deterioration;</p> <p>CH1: Number of monuments on the RMP, impacted by granted planning permissions;</p> <p>CH1: Number of protected structures impacted by development granted planning permission;</p> <p>CH1 & CH2: Number of protected structures that have been demolished because of long term neglect and dereliction.</p>	<p>No. of archaeological sites Investigated;</p> <p>No impact on the fabric or setting of monuments on the Record of Monuments and Places (RMP) by development granted planning permission;</p> <p>No impacts on the architectural heritage value or setting of protected structures by development granted planning permission;</p> <p>CH2: No. of ACAs</p> <p>Protect and preserve features of special interest as included in the RPS, RMP and ACA;</p> <p>CH2: Protect and enhance physical features and areas that contribute to the town's special character and setting.</p>	<p>Heritage Council Ireland.</p>
Landscape	<p>L: To avoid significant adverse impacts on the landscape, especially with regard to landscapes which are most valuable and most sensitive to change and protected focal points and views.</p>	<p>L: Minimal negative impacts on designated landscapes and scenic views, landscape features of local value;</p> <p>L: Number of protected views impacted by development.</p>	<p>L: Number of developments impacting on designated landscapes and scenic views, routes and landscape features of local value;</p> <p>L: No planning permission granted within special qualities of landscapes that materially contravene the policies or objectives of the plan, within the lifetime of the plan;</p> <p>L: No negative alteration to</p> <ul style="list-style-type: none"> Protected views. 	<ul style="list-style-type: none"> Galway County Council.

Table 10.1 Monitoring and Reporting Programme

10.3 Conclusion

The Draft Portumna Local Area Plan sets out an overall strategy, policies and objectives for the period 2016-2022 which seeks to provide for the long term planning and overall benefit of the town. This SEA Environmental Report demonstrates how environmental parameters have been addressed in the plan preparation process to date. Consultation has been undertaken for the Scoping of the Environmental Report, and current baseline information has been described for all SEA parameters. This Environmental Report forms a key part of the consultation process and is accompanied by the Habitats Directive Assessment and *Draft Portumna Local Area Plan 2016-2022* which is subject to public display. Policies, objectives and land use zonings were assessed in terms of the impacts on the environment and mitigation measures proposed through rewording of the policies/objectives or rezoning where necessary. The mitigation measures proposed for the policies/objectives through the SEA and AA process have been incorporated into the Draft Local Area Plan.

The SEA and Appropriate Assessment (AA) have informed the Draft Local Area Plan through an ongoing iterative process that incorporated environmental considerations and sensitivities throughout the preparation of the plan. The SEA and HDA has been undertaken in line with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011 (as amended) and the European Union (Natural Habitats) Regulations 94 of 1999, as amended SI 233/1998 and SI 378/2005. Subject to the full and proper implementation of the mitigation measures outlined in this Environmental Report, it is considered that significant adverse impacts on the environment will be avoided.

This Environmental Report, which identifies the likely significant effects on the environment of implementing the plan has been submitted to the Elected Members of Galway County Council for their consideration and should be read in conjunction with the *Draft Portumna Local Area Plan 2016-2022*. The Environmental Report must be taken account of before adopting the Plan.

Appendix I

SEA MATRIX

Appendix II
RELEVANT PLANS, PROGRAMMES AND POLICIES

Relevant Plans, Programmes and Policies

International/EU Level

Water Framework Directive (2000/60/EC)
Floods Directive (2007/60/EC)
SEA Directive (2001/42/EC)
Bathing Water Directive (2006/7/EC)
Habitats Directive (92/43/EEC)
Birds Directive (79/409/EEC)
Freshwater Fish Directive (78/659/EEC)
Drinking Water Directive (98/83/EC)
EIA Directive(85/337/EEC) as amended by Directive 97/11/EC
Sewage Sludge in Agriculture Directive
Groundwater Directive (2006/118/EC)
Urban Waste Water Treatment Directive
Nitrates Directive
IPPC Directive
Waste Framework Directive
The Environmental Noise Directive (2002/49/EC)
Convention for the Protection of the Archaeological Heritage of Europe (revised) (Valletta 1992)
Convention for the Protection of the Architectural Heritage of Europe (Granada 1985)
Landfill Directive (99/31/EC)
Soil Thematic Strategy (COM) 2006/231) and proposal for a Soil Framework Directive (COM(2006)(232)

National Level

National Development Plan (as amended)
National Spatial Strategy 2002-2020
National Climate Change Strategy
Climate Change Adaptation and Mitigation Framework
Government White Paper – Delivering a Sustainable Energy Future for Ireland
Our Sustainable Future, A Framework for Sustainable Development for Ireland
“Actions for Biodiversity 2011-2016”, Ireland’s 2nd National Biodiversity Plan
Flora Protection Order 1999
The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000
European Communities (Natural Habitats) Regulations, S.I 94/1997, as amended S.I. 233/1998, S.I. 378/2005
European Communities (Birds and Natural Habitats) Regulations 2011(S.I. No 477 of 2011)
National Heritage Plan 2002-2006
The National Monuments Acts (2004)
The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999
Planning and Development Acts 2000(as amended)
Planning and Development (Strategic Infrastructure) Act 2006
Sustainable Residential Development in Urban Areas Best Practice Urban Design Manual
The Planning System and Flood Risk Assessment Guidelines, 2009
Local Area Plan Guidelines
Retail Planning Guidelines & Retail Design Manual
Spatial Planning and National Roads Guidelines’ Transport 21
Water Services Investment Programme
Waste Water Discharge (Authorisation) Regulations 2007(SI No.684 of 2007)

Relevant Plans, Programmes



Surface Water Regulations 2009
Waste Management Act 1996(as amended)

Regional Level

River Basin Management Plans,
Flood Risk Management Plans,
Regional Planning Guidelines for the West
Region 2010-2022,
Water Services Strategic Plans
Regional Waste Management Plans,
Groundwater Protection Schemes,
A Platform for Change Strategy 2000-2016,

Local Level

Galway County Development Plan
Galway County Heritage Plan 2010-2016,
Galway County Council Walking & Cycling Strategy Report 2012
Local Area Plans
Regional Planning Guidelines for the West
Region 2010-2022,
Water Services Investment Programme

Appendix III
SITE SYNOPSIS

SITE SYNOPSIS

SITE NAME: LOUGH DERG (SHANNON) SPA

SITE CODE: 004058

Lough Derg is the largest of the Shannon Lakes, being some 40 km long. Its maximum breadth across the Scarriff Bay -Youghal Bay transect is 13 km but for most of its length it is less than 5 km wide. The lake is relatively shallow at the northern end being mostly 6 m in depth but in the middle region it has an axial trench and descends to over 25 m in places. The narrow southern end of the lake has the greatest average depth, with a maximum of 34 m. The greater part of the lake lies on Carboniferous limestone but the narrow southern section is underlain by Silurian strata. Most of the lower part of the lake is enclosed by hills on both sides, the Slieve Aughty Mountains to the west and the Arra Mountains to the east. The northern end is bordered by relatively flat, agricultural country. The lake shows the high hardness levels and alkaline pH to be expected from its mainly limestone catchment basin, and it has most recently been classified as a mesotrophic system. The lake has many small islands, especially on its western and northern sides. The shoreline is often fringed with swamp vegetation. Aquatic vegetation includes a range of charophyte species, including the Red Data Book species, *Chara tomentosa*. The shoreline is often fringed by swamp vegetation, comprised of such species as Common Reed (*Phragmites australis*), Great Fen-sedge (*Cladium mariscus*) and Bottle Sedge (*Carex rostrata*).

Lough Derg is of importance for both breeding and wintering birds. The site supports a nationally important breeding colony of Common Tern (55 pairs recorded in 1995). Management of one of the islands used for nesting has increased the area of suitable habitat available and prevented nests being destroyed by fluctuating water levels. Large numbers of Black-headed Gull have traditionally bred on the many islands (2,176 pairs in 1985) but the recent status of this species is not known. A large Cormorant colony occurs in trees on the islands near Portumna - 167 nests were counted in 1995 and 122 in 1999. Lough Derg is also a noted breeding site for Great Crested Grebe (47 pairs in 1995) and Tufted Duck (326 individuals in late May 1995).

In winter, the lake is important for a range of waterfowl species, especially diving ducks, with nationally important populations of Tufted Duck (1,029), Goldeneye (215) and Mute Swan (235) - figures are average peaks for 4 of the 5 seasons 1995/96-1999/00. Other species which occur include Cormorant (120), Whooper Swan (18), Wigeon (272), Teal (342), Mallard (417), Pochard (61), Black-headed Gull (814), Coot (229), Lapwing (1,346) and Little Grebe (14). Lough Derg has traditionally been used by a relatively small flock of Greenland White-fronted Goose based in the Lough Derg-Lough Graney area and possibly further afield. The mean flock size for the 5 winters 1989/90-1993/94 was only 22, but few sightings have been made in recent years, In March 2004, however, c. 20 birds were observed in the Scarriff Bay area indicating that a flock may still be present in the area.

Lough Derg is of conservation interest for its fish and freshwater invertebrates. Lampreys, listed on Annex II of the E.U. Habitats Directive, are known to occur and the lake contains a landlocked population of Sea Lamprey (*Petromyzon marinus*). Brook Lamprey (*Lampetra planeri*) is known to be common in the lower River Shannon catchment where all three Irish Lamprey species breed. The endangered fish species Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Derg, one of only four sites (L. Neagh, L. Erne, L. Ree and L. Derg) in which it occurs. Lough Derg is also a well-known fishing lake with a good Trout (*Salmo trutta*) fishery. Atlantic Salmon (*Salmo salar*) also use the lake as a spawning ground.

Lough Derg was classified as being strongly eutrophic in the early 1990s. Since 1997, a monitoring programme on the Shannon lakes has shown that the symptoms of eutrophication previously documented (i.e. high chlorophyll level and reduced water visibility) have been ameliorated significantly. These reductions have coincided with the invasion of the Shannon system by the Zebra Mussel (*Dreissena polymorpha*), a species which feeds on plankton, and also with measures to reduce phosphorus in sewage plants in the catchment. Enrichment of the lake, both by agricultural run-off and sewage, remains a threat and could affect the bird populations, especially the diving duck. Whilst the presence of Zebra Mussel in Lough Derg appears to have improved water quality in the lake, in the long-term this invasive bivalve may threaten the ecology of the lake. Recreational activities presently cause some disturbance to the birds and an increase in such activities would be of concern.

Lough Derg SPA is of high ornithological importance as it supports nationally important breeding populations of Common Tern, Cormorant, Great Crested Grebe, and probably Tufted Duck and Black-headed Gull. In winter, it has nationally important populations of Tufted Duck and Goldeneye, as well as a range of other species including Whooper Swan. The site is still used on occasions by Greenland White-fronted Goose. The presence of Common Tern, Whooper Swan and Greenland White-fronted Goose is of particular note as these are listed on Annex I of the E.U. Birds Directive.

SITE SYNOPSIS

SITE NAME: MIDDLE SHANNON CALLOWS SPA

SITE CODE: 004096

The Middle Shannon Callows SPA is a long and diverse site which extends for approximately 50 km from the town of Athlone (at southern point of Lough Ree) to the town of Portumna (northern point of Lough Derg). The site averages about 0.75 km in width though in places is up to 1.5 km wide. Water levels on the site are greatly influenced by the very small fall between Athlone and Portumna and by the weir at Meelick. The Shannon Callows has a common boundary with two other sites of similar habitats, the River Suck Callows and the Little Brosna Callows, both of which are also Special Protection Areas.

The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The callows are mainly too soft for intensive farming but are used for hay or silage or for summer grazing. Other habitats of smaller area which occur alongside the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. Along most of its length the site is bordered by raised bogs, now mostly exploited for peat, esker ridges and limestone-bedrock hills. The diversity of semi-natural habitats and the sheer size of the site attracts an excellent diversity of bird species and significant populations of several species.

The composition of the lowland wet grassland varies, depending on elevation and flooding patterns. Two habitats listed on Annex I of the EU Habitats Directive are well represented within the site – *Molinia* meadows and lowland hay meadows. The former is characterised by the presence of the Meadow Thistle (*Cirsium dissectum*) and Purple Moor-grass (*Molinia caerulea*), while typical species in the latter include Meadow Fescue (*Festuca pratensis*), Rough Meadow-grass (*Poa trivialis*), Downy Oat-grass (*Avenula pubescens*) and Common Sorrel (*Rumex acetosa*). In places these two habitats grade into one another.

Low-lying areas of the callows with more prolonged flooding are characterised by Floating Sweet-grass (*Glyceria fluitans*), Marsh Foxtail (*Alopecurus geniculatus*) and wetland herbs such as Yellow Cress (*Rorippa* spp.), Water Forget-me-not (*Myosotis scorpioides*) and Common Spike-rush (*Eleocharis palustris*). Most of the callows, however, consist of a plant community characterised by Creeping Bent (*Agrostis stolonifera*), Brown Sedge (*Carex disticha*), Common Sedge (*Carex nigra*), and herbs such as Marsh Marigold (*Caltha palustris*) and Marsh Bedstraw (*Galium palustre*). Scarce plant species associated with the grassland include Meadow-rue (*Thalictrum flavum*), Summer Snowflake (*Leucojum aestivum*) and Marsh Stitchwort (*Stellaria palustris*).

The dry grassland areas, especially where they exist within hay meadows, are species-rich, and can contain many orchid species and such species as Cowslip (*Primula*

veris), Adder's-tongue Fern (*Ophioglossum vulgatum*) and Spring-sedge (*Carex caryophyllea*), as well as an unusually wide variety of grasses. In places along the edge of the callows there occurs wet broad-leaved woodland dominated by both Birch (*Betula pubescens*) and Alder (*Alnus glutinosa*) and dry broad-leaved woodland dominated by Hazel (*Corylus avellana*). There are also areas of raised bog and fen on old cut-away bog with species such as Black Bog-rush (*Schoenus nigricans*).

Two legally-protected plant species (Flora (Protection) Order 1999) occur in the site: Opposite-leaved Pondweed (*Groenlandia densa*) in drainage ditches, and Meadow Barley (*Hordeum secalinum*) on dry alluvial grassland. The Red Data Book plant Green-winged Orchid (*Orchis morio*) is known from dry calcareous grasslands within the site, while the site also supports a healthy population of Marsh Pea (*Lathyrus palustris*).

The Middle Shannon Callows qualifies as a site of International Importance for wintering waterfowl both on the total numbers regularly exceeding 20,000 birds (for example 27,581 in winter 1998/99) and for the Whooper Swan population (287 – average peak count 1995/96-1999/00). Whooper Swan is listed on Annex I of the EU Birds Directive. Five further species occur in numbers of national importance (all figures are average peaks for winters 1995/96-1999/00) - Mute Swan 349, Wigeon 2,972, Golden Plover (listed on Annex I of the EU Birds Directive) 4,254, Lapwing 11,578 and Black-tailed Godwit 388. For some of these species, peak counts in the period have been considerably higher than the averages, such as 1,096 Black-tailed Godwits and 23,839 Lapwings. The importance of the site for species like Black-tailed Godwit and Whimbrel may have been underestimated if count coverage missed the brief spring peaks for these species. A wide range of other species occur in numbers of regional or local importance, including Bewick's Swan (listed on Annex I of the EU Birds Directive) 7, Teal 77, Tufted Duck 33, Dunlin 369, Curlew 129, Redshank 31 and Black-headed Gull 1,061. Small numbers of Greenland White-fronted Goose (listed on Annex I of the EU Birds Directive) use the Shannon Callows (average 21, peak 55) and these are generally associated with larger flocks which occur on the adjacent Little Brosna Callows and River Suck Callows. The callow grasslands provide optimum feeding grounds for these various species of waterfowl, while many of the birds also roost or rest within the site.

The site is also of national importance for breeding waterfowl. The total population of breeding waders (Lapwing, Redshank, Snipe and Curlew) on the Shannon and Little Brosna Callows in 1987 was one of three major concentrations in Ireland and Britain. Since then, however, numbers of at least Lapwing and Redshank have shown serious declines (a full survey of the callows is being carried out in 2002). For example, at a monitoring site at the callows at Shannon Harbour, numbers of Lapwing fell from 29 to 10 pairs and Redshank from 26 to 10 pairs between 1987 and 1994. Black-tailed Godwit, a very rare breeding species in Ireland, nests or attempts to nest in small numbers each year within the site. A further scarce breeding species, Shoveler, also nests in small numbers each year (an estimated 12 pairs in 1987).

The Shannon Callows continues to hold approximately 40% of the Irish population of Corncrake, a species of global conservation concern that is also listed on Annex I of the EU Birds Directive. Between 1997 and 2001, the average number of calling birds

was 60, with a peak of 69. BirdWatch Ireland, in association with Dúchas and the RSPB, operate a grant scheme to encourage farming practices that favour the Corncrake and this has probably been responsible for the stabilisation of numbers in recent years. A related scarce species, the Quail, is also known to breed within the callow grasslands.

A good variety of other bird species are attracted to this site. Birds of prey, including scarce species such as Merlin (listed on Annex I of the EU Birds Directive) and wintering Hen Harrier (listed on Annex I of the EU Birds Directive), are regularly reported hunting over the callows. A range of passerine species associated with grassland and swamp vegetation breed, including Sedge Warbler, Grasshopper Warbler, Skylark and Reed Bunting. Kingfisher (listed on Annex I of the EU Birds Directive) is also regularly seen within the site. Whinchat, an uncommon breeding species, occur in small numbers.

The wintering waterfowl within the Shannon Callows are difficult to monitor due to the size and inaccessibility of large parts of the site. In each winter there is usually one complete aerial census, as well as partial land-based counts. The population of Corncrake within the site is monitored each year and research is carried out on various aspects of the species' ecology. The breeding waders are also surveyed at intervals. About 30 ha of the callows is a nature reserve owned by voluntary conservation bodies.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse. In winter the site is internationally important for the total numbers of birds (regularly exceed 20,000) and for Whooper Swan in particular. It also holds nationally important populations of a further five species. Some of the wintering species are listed on Annex I of the EU Birds Directive, including Whooper Swan, Greenland White-fronted Goose and Golden Plover. In summer the site supports important populations of breeding waders. Perhaps the most important species which occurs in the site is Corncrake (the site holds 40% of the national total), as this is listed on Annex I of the EU Birds Directive and is Ireland's only globally endangered species.

20.6.2002

Lough Derg, North-East Shore SAC (Site code 002241):

Lough Derg, the lowest order lake on the River Shannon, is one of the largest bodies of freshwater in Ireland. This SAC, however, only includes the northern shore of the lake from the mouth of the Cappagh River in the north-west to just below Black Lough at the north-eastern shore. The greater part of this site lies on Carboniferous limestone, although there is Old Red Sandstone on the southern shores of the eastern section.

The geology of the lake shore is principally limestone and in places this protrudes at the surface in the form of boulders and rubble, and can be classified as limestone pavement. These are often bryophyte-rich surfaces or else support a calcareous grassland or heath flora, as well as some woody species, such as Yew (*Taxus baccata*) and Juniper (*Juniperus communis*).

A second priority Annex I habitat, Cladium fen, occurs occasionally along the lake margins, mainly in association with alkaline fens, Common Reed (*Phragmites australis*) and other swamp vegetation.

A substantial area of Yew is located on limestone at Cornalack, where Yew forms a scrub woodland along the east shore of Lough Derg. Elsewhere, small stands of Yew occur. Juniper occurs throughout this site in a range of habitats, associated with calcareous grasslands, heath and limestone outcrops. Some of the finest examples of Juniper formations in Ireland occur along the lake edge where upright, bushy Juniper shrubs up to 3 m tall are found. Deciduous woodlands are also a notable feature of the site, dominated by oak (*Quercus spp.*), as at Bellevue, and Hazel/Ash at many of the examples along the north-eastern shore. Wet woodland is frequent along the lake shore, and in some areas this conforms well with the E.U. Annex I habitat, alluvial woodland.

The only known site in the country for the Red Data Book plant Irish Fleabane (*Inula salicina*) occurs along the lake shore. Other Red Data Book species present within this site are Marsh Pea (*Lathyrus palustris*) and Ivy Broomrape (*Orobancha hederarum*). The Red Data Book stonewort *Chara tomentosa* has its stronghold in Lough Derg.

The lake is rated as nationally important for waterfowl. The entire lake, including all of the islands, is a designated SPA (Special Protection Area). The lake also supports a number of Greenland White-fronted Goose, a bird species listed on Annex I of the E.U. Birds Directive. There is a Wildlife Sanctuary at the north western edge of the lake.

Lough Derg is of conservation interest also for its fish and freshwater invertebrates. Lampreys, are known to occur and the lake contains an apparently self-sustaining landlocked population of Sea Lamprey (*Petromyzon marinus*). The endangered fish species Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Derg. Lough Derg is also a well known fishing lake with a good Trout (*Salmo trutta*) fishery. Atlantic Salmon (*Salmo salar*) also use the lake as a spawning ground.

Otter and Badger have been recorded within the site.

Land use within the site is mainly of a recreational nature with many boat hire companies, holiday home schemes and angling clubs located at the lake edge.

Recreational disturbance may pose a threat to the wintering wildfowl populations, though tourism is scaled down during the winter. The water body is surrounded mainly by improved pastoral farmland to the south and east, with areas of bog to the south-west and west. Coniferous plantations are present along the west and north-west shore and small areas of these are included within the site. If these areas are felled no further planting should take place as afforestation damages the wetland habitats between the plantation and lake edge.

The main threats to the quality of the site are water polluting activities resulting from intensification of agricultural activities around the lake shore, uncontrolled discharge of sewage, which is causing eutrophication of the lake, and housing and boating development which has resulted in the destruction of lakeshore habitats. There is also significant fishing and shooting pressure on and around the lake. Forestry can result in the loss of some areas of wetland habitat. The spread of Zebra Mussel (*Dreissena polymorpha*) in Lough Derg also poses a threat the ecology of the lake.

This is a site of significant ecological interest, with six habitats listed on Annex I of the E.U. Habitats Directive. Four of these are priority habitats - Cladium fen, alluvial woodland, limestone pavement and Yew woodland. Other annexed habitats present include alkaline fen and Juniper scrub formations on heath and calcareous grasslands. In addition, the lake itself is an SPA that supports important numbers of wintering wildfowl, Greenland White-fronted Goose, Common Tern and Cormorant, a number of which are listed under Annex I of the E.U. Birds Directive.

Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

Code	Description
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands
7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> *
7230	Alkaline fens
8240	Limestone pavements*
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)*
91J0	<i>Taxus baccata</i> woods of the British Isles*

* denotes a priority habitat



Site Name: River Shannon Callows SAC

Site Code: 000216

The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along much of its length the site is bordered by raised bogs (many, but not all, of which are subject to large-scale harvesting), esker ridges and limestone-bedrock hills. The soils grade from silty-alluvial to peat. This site has a common boundary, and is closely associated, with two other sites with similar habitats, River Suck Callows and Little Brosna Callows.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[6410] <i>Molinia</i> Meadows
[6510] Lowland Hay Meadows
[8240] Limestone Pavement*
[91E0] Alluvial Forests*
[1355] Otter (<i>Lutra lutra</i>)

The River Shannon Callows is mainly composed of lowland wet grassland. Different plant communities occur, depending on elevation, and therefore flooding patterns. Two habitats listed on Annex I of the E.U. Habitats Directive are well-represented within the site – *Molinia* meadows and lowland hay meadows. The former is characterised by the presence of the Meadow Thistle (*Cirsium dissectum*) and Purple Moor-grass (*Molinia caerulea*), while typical species in the latter include Meadow Fescue (*Festuca pratensis*), Rough Meadow-grass (*Poa trivialis*), Downy Oat-grass (*Avenula pubescens*), Common Knapweed (*Centaurea nigra*), Ribwort Plantain (*Plantago lanceolata*) and Common Sorrel (*Rumex acetosa*). In places these two habitats grade into one another.

Low-lying areas of the callows with more prolonged flooding are characterised by Floating Sweet-grass (*Glyceria fluitans*), Marsh Foxtail (*Alopecurus geniculatus*) and wetland herbs such as Yellow-creed (*Rorippa* spp.), Water Forget-me-not (*Myosotis scorpioides*) and Common Spike-rush (*Eleocharis palustris*). Most of the callows consist of a plant community characterised by Creeping Bent (*Agrostis stolonifera*), Brown Sedge (*Carex disticha*), Common Sedge (*Carex nigra*), and herbs such as Marsh-marigold (*Caltha palustris*) and Marsh Bedstraw (*Galium palustre*), while the more elevated and peaty areas are characterised by low-growing sedges, particularly

Yellow Sedge (*Carex flava* agg.) and Star Sedge (*Carex echinata*). All these communities are very diverse in their total number of plant species, and include the scarce species Meadow-rue (*Thalictrum flavum*), Summer Snowflake (*Leucojum aestivum*) and Marsh Stitchwort (*Stellaria palustris*).

A further two Annex I habitats, both listed with priority status, have a minor though important presence within the site. Alluvial forest occurs on a series of alluvial islands just below the ESB weir near Meelick. Several of the islands are dominated by well-grown woodland consisting mainly of Ash (*Fraxinus excelsior*) and Willows (*Salix* spp.). The islands are prone to regular flooding from the river.

At Clorhane, an area of limestone pavement represents the only known example in Co. Offaly. It is predominantly colonised by mature Hazel (*Corylus avellana*) woodland, with areas of open limestone and calcareous grassland interspersed. The open limestone pavement comprises bare or moss-covered rock, or rock with a very thin calcareous soil cover supporting a short grassy turf. The most notable plant in the grassy area is a substantial population of Green-winged Orchid (*Orchis morio*), which occurs with such species as Sweet Vernal-grass (*Anthoxanthum odoratum*), Quaking-grass (*Briza media*), sedges (*Carex caryophyllea*, *C. flacca*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Common Knapweed (*Centaurea nigra*), and Ribwort Plantain (*Plantago lanceolata*). Ferns associated with the cracks in the pavement include *Asplenium trichomanes*, *A. ruta-muraria*, *A. adiantum-nigrum* and *Polypodium australe*. Bryophytes include *Grimmia apocarpa* and *Orthotrichum* cf. *anomalum*. Anthills are common within the open grassland. The Hazel wood is well-developed and has herbaceous species such as Primrose (*Primula vulgaris*), Common Dog-violet (*Viola riviniana*), Wood-sorrel (*Oxalis acetosella*) and Herb-Robert (*Geranium robertianum*). The wood is noted for its luxuriant growth of epiphytic mosses and liverworts, with such species as *Neckera crispa* and *Hylocomium brevirostre*. Yew (*Taxus baccata*) occurs in one area.

Other habitats of smaller area but also of importance within the site are lowland dry grassland, drainage ditches, freshwater marshes and reedbeds. The dry grassland areas, especially where they exist within hay meadows, are species-rich, and of two main types: calcareous grassland on glacial material, and dry grassland on levees of river alluvium. The former can contain many orchid species, Cowslip (*Primula veris*), abundant Adder's-tongue (*Ophioglossum vulgatum*) and Spring-sedge (*Carex caryophyllea*), and both contain an unusually wide variety of grasses, including False Oat-grass (*Arrhenatherum elatius*), Yellow Oat-grass (*Trisetum flavescens*), Meadow Foxtail (*Alopecurus pratense*), and Meadow Brome (*Bromus commutatus*). In places Summer Snowflake also occurs.

Good quality habitats on the edge of the callows included in the site are wet broadleaved semi-natural woodland dominated by both Downy Birch (*Betula pubescens*) and Alder (*Alnus glutinosa*), and dry broadleaved woodland dominated by Hazel. There are also areas of raised bog, fen on old cut-away bog with Black Bog-rush (*Schoenus nigricans*), and a 'petrifying stream' with associated species-rich

calcareous flush which supports Yellow Sedge (*Carex lepidocarpa*), Blunt-flowered Rush (*Juncus subnodulosus*) and Stoneworts (*Chara* spp.).

Two species which are legally protected under the Flora (Protection) Order, 1999, occur in the site - Opposite-leaved Pondweed (*Groenlandia densa*) in drainage ditches, and Meadow Barley (*Hordeum secalinum*) on dry alluvial grassland. This is one of only two known inland sites for Meadow Barley in Ireland. The Red Data Book plant Green-winged Orchid is known from dry calcareous grasslands within the site, while the site also supports a healthy population of Marsh Pea (*Lathyrus palustris*).

The site is of international importance for wintering waterfowl as numbers regularly exceed the 20,000 threshold (mean of 34,985 for five winters 1994/94-1998/99). Of particular note is an internationally important population of Whooper Swans (287). A further five species have populations of national importance (all figures are means for five winters 1995/96-1999/00): Mute Swan (349), Wigeon (2972), Golden Plover (4254), Lapwing (11578) and Black-tailed Godwit (388). Species which occur in numbers of regional or local importance include Bewick's Swan, Tufted Duck, Dunlin, Curlew and Redshank. The population of Dunlin is notable as it is one of the few regular inland flocks in Ireland. Small flocks of Greenland White-fronted Goose use the Shannon Callows; these are generally associated with larger flocks which occur on the adjacent Little Brosna Callows and River Suck Callows.

Shoveler (an estimated 12 pairs in 1987) and Black-tailed Godwit (Icelandic race) (one or two pairs in 1987) breed within this site. These species are listed in the Red Data Book as being threatened in Ireland. The scarce bird Quail is also known to breed within the area. The callows has at times held over 40% of the Irish population of the globally endangered Corncrake, although numbers have declined in recent years. A total of 66 calling birds were recorded in 1999, but numbers have dropped significantly since then. The total population of breeding waders (Lapwing, Redshank, Snipe and Curlew) in 1987 was one of three major concentrations in Ireland and Britain. The population of breeding Redshank in the site was estimated to be 10% of the Irish population, making it nationally significant. Also, the Annex I species Merlin and Hen Harrier are regularly reported hunting over the callows during the breeding season and in autumn and winter.

This site holds a population of Otter, a species listed on Annex II of the E.U. Habitats Directive, while the Irish Hare, which is listed in the Irish Red Data Book, is a common sight on the callows.

The Shannon Callows are used for summer dry-stock grazing (mostly cattle, with some sheep and a few horses), and permanent hay meadow. About 30 ha is a nature reserve owned by voluntary conservation bodies. The River Shannon is used increasingly for recreational purposes with coarse angling and boating accounting for much of the visitor numbers. Intermittent and scattered damage to the habitats has occurred due to over-deepening of drains and peat silt deposition, water-skiing, ploughing and neglect of hay meadow (or reversion to pasture). However, none of these damaging activities can yet be said to be having a serious impact. Threats to the

quality of the site may come from the siting of boating marinas in areas away from centres of population, fertilising of botanically-rich fields, the use of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow, disturbance of birds by boaters, anglers, birdwatchers and the general tourist. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland, and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive occur within the site – *Molinia* meadows and lowland hay meadows with good examples of a further two Annex habitats (both with priority status). In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration, and in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.