

Volume
10b(ii)



Comhairle Contae an Chláir
Clare County Council

Clare County Development Plan 2017–2023

Strategic Environmental Assessment Environmental Report





Note to Reader

On the 28th of March 2017, the Minister for the Environment, Community and Local Government, Simon Coveney T.D. issued a Ministerial Direction pursuant to Section 31 of the Planning and Development Act 2000 (as amended) in relation to the adopted Clare County Development Plan 2017-2023. The Minister directed that Clare County Council:-

- (i) Remove written objective TOU7 Ardcllooney and accompanying text, page 19, from Volume 3C: Killaloe Municipal District – Written Statement and Maps – Interim Version
- (ii) Amend the maps for Killaloe which set out the objectives for Ardcllooney by changing the zoning objective for lands currently indicated as “TOU7” (tourism) to un-zoned.

The Ministerial Direction took effect from the 28th March 2017.

This document has been altered in accordance with the above Ministerial Direction and supersedes the Clare County Development Plan 2017-2023 Volume 10b(ii) Strategic Environmental Assessment – Environmental Report, dated 25th January 2017.

The Ministerial Direction has also necessitated the alteration of the following accompanying documents:

- **Volume 1 Written Statement and Maps**
- **Volume 3c Killaloe Municipal District Written Statement and Maps**
- **Volume 10 Strategic Environmental Assessment**
 - **Part i) Non Technical Summary**
 - **Part iii) SEA Statement**
- **Volume 10a Natura Impact Report**
- **Volume 10 Appropriate Assessment Concluding Statement**

Please note that Volumes 1, 3 and 10, as altered on the 28th March 2017, supersede Volumes 1, 3 and 10, dated 25th January 2017.

Table of Contents

Abbreviations and Glossary	10
Chapter One – Introduction	18
1.1 Purpose of this Report	18
1.2 Background	18
1.2.1 County Clare	18
1.2.2 Interaction with Other Relevant Plans and Programmes	21
1.2.3 Planning Hierarchy	21
1.2.4 Settlement Hierarchy and Strategy	23
1.3 Nature of Zonings	27
1.4 Zoning Matrix	30
Chapter Two - SEA Methodology	32
2.1 Introduction	32
2.2 SEA Process	32
2.2.1 Screening	34
2.2.2 Scoping	34
2.2.3 Environmental Report	51
2.2.4 SEA Statement - Information on Decision	56
2.2.5 Geographical Information Systems	56
2.3 Data Information Gaps	56
2.4 SEA Recommendation*	57
Chapter Three – Clare County Development Plan 2017-2023	58
3.1 Introduction	58
3.2 Format and Content of the Clare County Development Plan	58
3.2.1 Vision for County Clare	60
3.2.2 Goals	60
3.2.3 The Role of Local Government and the County Development Plan 2017 – 2023	62
3.2.4 Proper Planning and Sustainable Development	62
3.2.5 Monitoring and Progress	62
Chapter Four – Relationship with other Plans and Policies	64
4.1 Introduction	64
4.2 Population, Human Health & Quality of Life	65
4.3 Biodiversity, Fauna and Flora	72
4.4 Soil & Geology	79
4.5 Water	81

4.6 Air and Climatic Factors	84
4.7 Material Assets.....	85
4.8 Cultural Heritage	90
4.9 Landscape.....	92
4.10 SEA Recommendation*	93
Chapter 5 Environmental Baseline	95
5.1 Introduction	95
5.2 Purpose of Environmental Baseline	95
5.3 Environmental Inter-relationships	95
5.4 SEA Recommendations	95
5.5 Current State of the Environment	96
5.6 Biodiversity, Flora and Fauna	97
5.6.1 Introduction	97
5.6.2 Key Legislation	97
5.6.3 Biodiversity and Climate Change Adaptation	100
5.6.4 Biodiversity in the Plan Area	101
5.6.5 European Sites	102
5.6.6 Proposed Natural Heritage Areas	109
5.6.7 Ramsar Sites.....	116
5.6.8 Wetlands	116
5.6.9 Other Sites of Environmental and Ecological Importance	117
5.6.10 Burren National Park.....	117
5.6.11 Statutory Nature Reserves.....	117
5.6.12 Wildfowl Sanctuaries	118
5.6.13 The Shannon Estuary	118
5.6.14 Native Woodlands.....	119
5.6.15 Coastal Sites	119
5.6.16 Protected Habitats and species outside of Designated Sites.....	119
5.6.17 NPWS Rare and Protected Species Data.....	121
5.6.18 Green Infrastructure	125
5.6.19 Riparian Zones.....	126
5.6.20 Protected Species within the Plan Area.....	126
5.6.21 Invasive Species	128
5.6.22 Biodiversity Issues and Threats in the Plan area.....	129
5.6.23 What would happen to biodiversity, flora and fauna without implementation of the Plan.....	130

5.6.24 Data gaps/difficulties	131
5.6.25 Inter-relationships with Other Environmental Parameters	131
5.6.26 SEA Recommendations *	131
5.7 Population, Human Health and Quality of Life	140
5.7.1 Introduction	140
5.7.2 Population	141
5.7.3 Population Trends and Targets	144
5.7.4 Age Profile	146
5.7.5 Education Profile	146
5.7.6 Employment & Economy	147
5.7.7 Human Health and Quality of Life	149
5.7.8 Issues and Threats	155
5.7.9 Data Gaps/difficulties	156
5.7.10 Effects of Not Implementing the Plan	156
5.7.11 Inter-relationship/actions with other environmental parameters	157
5.7.12 SEA Recommendations*	157
5.8 Soil and Geology	159
5.8.1 Introduction	159
5.8.2 Soils	159
5.8.3 Soil and Climate Change	164
5.8.4 Geology	164
5.8.5 Quarrying	168
5.8.6 Landfill	168
5.8.7 Contaminated Sites	168
5.8.8 Issues and Threats in the Plan Area	169
5.8.9 What would happen to Soil and Geology without the implementation of the Plan?	169
5.8.10 Data Gaps/difficulties	170
5.8.11 Inter-relationships	170
5.8.12 SEA Recommendations *	170
5.9 Air and Climate	172
5.9.1 Introduction	172
5.9.2 Air Quality	172
5.9.3 Climate Change and Greenhouse Gas Emissions	174
5.9.4 Climate Change and Flooding	175
5.9.5 Issues and Threats in the Plan Area	175

5.9.6 What would happen to air and climate without the implementation of the Plan?	176
5.9.7 Data gaps/difficulties	176
5.9.8 Inter-relationships.....	176
5.9.9 SEA Recommendations *	176
5.10 Water	179
5.10.1 Introduction	179
5.10.2 Water Framework Directive.....	179
5.10.3 Shannon River Basin Management Plan	179
5.10.4 WFD Waterbody Status.....	180
5.10.5 Groundwater.....	183
5.10.6 Protected Bathing Waters.....	183
5.10.7 Climate Change and Water Quality and Quantity	184
5.10.8 Flooding.....	184
5.10.9 Water Conservation	185
5.10.10 Issues and Threats.....	185
5.10.11 What would happen to the water resource without implementation of the Plan?.....	188
5.10.12 Data Gaps/Problems	188
5.10.13 Inter-relationship / actions with other environmental parameters	188
5.10.14 SEA Recommendations *	188
5.11 Material Assets.....	197
5.11.1 Introduction	197
5.11.2 Transportation	197
5.11.3 Waste Management	199
5.11.4 Water Services Infrastructure	199
Wastewater Treatment.....	200
5.11.5 Renewable and Alternative Energy.....	201
5.11.6 Climate Change and Critical Infrastructure.....	205
5.11.7 Issues and Threats.....	205
5.11.8 What will happen to material assets without the implementation of the Plan?	206
5.11.9 Data gaps/difficulties	207
5.11.10 Inter- relationships.....	207
5.11.11 SEA Recommendations *	207
5.12 Cultural Heritage	211
5.12.1 Archaeological Heritage	211
5.12.2 Architectural Heritage.....	212

5.12.3 Existing Environmental Problems	213
5.12.4 What will happen to Cultural Heritage without the implementation of the Plan?	213
5.12.5 Data Information Gaps.....	213
5.12.6 Inter-relationships/compatibility.....	213
5.12.7 SEA Recommendations *	214
5.13 Landscape	217
5.13.1 Introduction	217
5.13.2 Landscape Designations and Protection.....	217
5.13.3 Landscape Characteristics of the Plan Area	218
5.13.4 Landscape Sensitivity	219
5.13.5 Living Landscapes.....	219
5.13.6 Local Landscapes Features.....	219
5.13.7 Issues and Threats in the Plan Area	220
5.13.8 What would happen to the landscape without implementation of the Plan?	220
5.13.9 Current Issues and Problems/Data gaps/difficulties?.....	220
5.13.10 Inter-relationship/actions with other environmental parameters.....	220
5.13.11 SEA Recommendations *	221
5.12 Environmental Sensitivities of the Plan Area.....	221
Chapter Six - Environmental Assessment and Strategic Environmental Objectives	227
6.1 Introduction	227
6.2 Development of Strategic Environmental Objectives.....	227
6.3 Application of Strategic Environmental Objectives	229
Chapter Seven - Development and Consideration of Alternatives.....	230
Chapter Eight - Assessment of Effects of Implementing the Clare County Development Plan.....	244
8.1 Introduction	244
8.2 Environmental Issues	244
8.3 Environmental Assessment and Evaluation.....	245
8.4 Assessment of Plan Objectives	245
8.5 Land Use Zoning.....	246
8.5.1 Assessment of Zoned Lands and Environmental Issues.....	250
8.6 Cumulative/In-combination Effects	251
8.6.1 Legislation	251
8.6.2 Planning Context	252
8.6.3 Assessment Approach.....	252
8.6.4 Cumulative effects with other plans and programmes	252

8.6.5 Other elements of the Plan.....	258
Chapter Nine - Mitigation	259
9.1 Introduction	259
Chapter Ten - Monitoring.....	319
10.1 Requirement for Monitoring.....	319
Chapter 11 - SEA Recommendations Summary.....	331

List of Figures

FIGURE 1.1	STUDY AREA	20
FIGURE 1.2	KEY RELEVANT LEGISLATION, PLANS AND PROGRAMMES.....	22
FIGURE 1.3	SETTLEMENT HIERARCHY	26
FIGURE 1.4	OVERVIEW OF SEA PROCESS	34
FIGURE 5.6.1	SPECIAL AREAS OF CONSERVATION WITHIN COUNTY CLARE	107
FIGURE 5.6.2	SPECIAL PROTECTION AREAS WITHIN COUNTY CLARE.....	108
FIGURE 5.6.3	NATURAL HERITAGE AREAS AND PROPOSED NATURAL HERITAGE AREAS WITHIN COUNTY CLARE.....	115
FIGURE 5.6.4	WETLAND LOCATIONS.....	134
FIGURE 5.6.5	WFD SURFACE WATER STATUS	135
FIGURE 5.6.6	BAT ROOST LOCATIONS WITHIN COUNTY CLARE.....	136
FIGURE 5.6.7	INVASIVE SPECIES – GROUP NAME	137
FIGURE 5.6.8	INVASIVE SPECIES – TAXON NAME.....	138
FIGURE 5.6.9	HABITAT MAPPING	139
FIGURE 5.7.1	MID WEST REGIONAL DEVELOPMENT ZONES.....	140
FIGURE 5.7.2	POPULATION DENSITY BY DED	143
FIGURE 5.7.3	CLARE AGE PROFILE 2006 – 2011	146
FIGURE 5.7.4	POPULATION AGED 15 YEARS AND OVER BY HIGHEST LEVEL OF EDUCATION COMPLETED	147
FIGURE 5.7.5	ESTIMATED PERCENTAGE OF HOMES ABOVE THE REFERENCE LEVEL IN CO. CLARE.....	149
FIGURE 5.7.6	NOISE MAPPING FOR COUNTY CLARE	150
FIGURE 5.7.7	SEVESO SITES	152
FIGURE 5.7.8	IPPC LICENCED ACTIVITIES.....	153
FIGURE 5.8.1	SOILS.....	160
FIGURE 5.8.2	SUBSOILS	161
FIGURE 5.8.3	GEOLOGY	166
FIGURE 5.8.4	COUNTY GEOLOGICAL SITE.....	167
FIGURE 5.8.5	DISTRIBUTION OF KNOWN QUARRYING ACTIVITIES	171
FIGURE 5.9.1	AIR QUALITY INDEX FOR COUNTY CLARE	173
FIGURE 5.10.2	ELEMENTS OF WFD SURFACE WATER STATUS	181
FIGURE 5.10.9	THE PREFERRED SCHEME	187
FIGURE 5.10.1	WFD CATCHMENTS AND SUB CATCHMENTS	190
FIGURE 5.10.3	WFD LAKE WATERBODY STATUS.....	191
FIGURE 5.10.4	WFD GROUNDWATER BODY STATUS	192
FIGURE 5.10.5	GROUNDWATER VULNERABILITY	193
FIGURE 5.10.6	BATHING WATER LOCATIONS.....	194
FIGURE 5.10.7	FLOODING	195
FIGURE 5.10.8	AQUATIC ECOLOGY AND AQUACULTURE SITES	196
FIGURE 5.11.3	TYPES OF WASTEWATER SYSTEMS COUNTY CLARE 2011	201

FIGURE 5.11.4	COUNTY CLARE EVOLUTION OF ENERGY CONSUMPTION (GWH / YR) – 2010 - 2020 BY FUEL.....	203
FIGURE 5.11.5	NATIONAL ENERGY EFFICIENCY ACTION PLAN 2 – SAVINGS APPORTIONED TO CLARE COUNTY ...	203
FIGURE 5.11.1	ROAD NETWORK.....	208
FIGURE 5.11.2	WATER TREATMENT PLANTS.....	209
FIGURE 5.11.4	WASTEWATER TREATMENT PLANTS	210
FIGURE 5.12.1	PROTECTED STRUCTURES THROUGHOUT THE COUNTY	215
FIGURE 5.12.2	RECORDED MONUMENTS THROUGHOUT THE COUNTY.....	216
FIGURE 5.13.1	LANDSCAPE CHARACTER AREAS	223
FIGURE 5.13.2	SEASCAPES.....	224
FIGURE 5.13.3	LANDSCAPE DESIGNATIONS	225
FIGURE 5.13.4	ENVIRONMENTAL SENSITIVITY OF THE PLAN AREA	226
FIGURE 9.1	PNHAS AND NHAS IN CONJUNCTION WITH WIND CLASSIFICATION.....	306

List of Tables

TABLE 1.1	SETTLEMENT HIERARCHY IN COUNTY CLARE	25
TABLE 2.1	SUMMARY OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT PROCESS.....	33
TABLE 2.2	KEY ENVIRONMENTAL ISSUES RAISED IN RELATION TO THE SEA AND APPROPRIATE ASSESSMENT (AA) AT SCOPING STAGE	42
TABLE 2.3	SUBMISSIONS RECEIVED AT PRE-DRAFT STAGE OF THE REVIEW OF THE COUNTY DEVELOPMENT PLAN.....	51
TABLE 2.2	STRUCTURE OF ENVIRONMENTAL REPORT IN COMPLIANCE WITH SCHEDULE 2B OF THE PLANNING AND DEVELOPMENT(STRATEGIC ENVIRONMENTAL ASSESSMENT) REGULATIONS 2004, AS AMENDED.	51
TABLE 2.3	THE INTEGRATED PROCESSES OF PREPARATION AND CONSULTATION FOR THE CLARE COUNTY DEVELOPMENT PLAN 2017-2023, STRATEGIC ENVIRONMENTAL ASSESSMENT AND APPROPRIATE ASSESSMENT	54
TABLE 5.6.1	LIST OF SPECIAL AREAS OF CONSERVATION (SACS) IN THE CLARE COUNTY DEVELOPMENT PLAN AREA.....	102
TABLE 5.6.2	LIST OF SPECIAL PROTECTION AREAS (SPAS) IN THE CLARE COUNTY DEVELOPMENT PLAN AREA.....	105
TABLE 5.6.3	LIST OF NATURAL HERITAGE AREAS (NHA) IN THE CLARE COUNTY DEVELOPMENT PLAN AREA ...	109
TABLE 5.6.4	LIST OF PROPOSED NATURAL HERITAGE AREAS (PNHA) IN THE CLARE COUNTY DEVELOPMENT PLAN AREA.....	110
TABLE 5.6.5	RAMSAR SITES WITHIN THE PLAN AREA.....	116
TABLE 5.6.6	STATUTORY NATURE RESERVES WITHIN THE COUNTY	117
TABLE 5.6.7	PROTECTED SPECIES WITHIN THE COUNTY.....	126
TABLE 5.7.1	POPULATION CHANGE FOR CLARE TOWNS AND RURAL AREAS	141
TABLE 5.7.2	PRIVATE HOUSEHOLDS BY TYPE OF ACCOMMODATION IN COUNTY CLARE	144
TABLE 5.7.3	PERMANENT PRIVATE HOUSEHOLDS BY YEAR BUILT IN COUNTY CLARE.....	144
TABLE 5.7.4	POPULATION CHANGE FOR CLARE TOWNS AND RURAL AREAS	145
TABLE 5.7.5	POPULATION TARGETS BREAKDOWN 2023	145
TABLE 5.7.6	POPULATION AGED 15 YEARS AND OVER BY PRINCIPAL ECONOMIC STATUS AND SEX.	147
TABLE 5.7.7	PERSONS AT WORK BY INDUSTRY AND SEX	148
TABLE 5.7.8	SEVESO SITES IN COUNTY CLARE.....	154
TABLE 5.7.9	IPPC LICENCED ACTIVITIES IN COUNTY CLARE.....	155
FIGURE 5.8.1	GREAT SOIL GROUPS FOR THE DRAFT CLARE COUNTY DEVELOPMENT PLAN	162
TABLE 5.8.2	PARENT MATERIAL CHARACTERISTICS OF THE MAIN SUBSOILS IN THE PLAN AREA	163
TABLE 5.8.3	HERITAGE SITES	165
TABLE 5.10.1	HERITAGE SITES	182
TABLE 5.11.2	COUNTY CLARE ENERGY CONSUMPTION – 2010 - 2020 BY SECTOR.....	202

TABLE 5.11.3	COUNTY CLARE EVOLUTION OF ENERGY EMISSIONS (,000T / CO ₂) – 2010 - 2020 BY SECTOR.....	203
TABLE 5.11.4	SAVINGS FOR ENERGY AND ENERGY RELATED CO2 EMISSIONS FOR COUNTY CLARE.....	204
TABLE 5.11.5	NATIONAL ENERGY EFFICIENCY ACTION PLAN 2 – SAVINGS APPORTIONED TO CLARE COUNTY ...	204
TABLE 6.1	STRATEGIC ENVIRONMENTAL OBJECTIVES.....	228
TABLE 8.1	CRITERIA FOR APPRAISING THE EFFECT OF THE PLAN OBJECTIVES ON THE SEOS	246
TABLE 8.2	LAND-USE ZONING CLASSIFICATIONS AND DEFINITIONS	247
TABLE 8.3	ASSESSMENT OF COUNTY DEVELOPMENT PLAN IN COMBINATION WITH VOLUMES 5, 6 & 7	253
TABLE 9.2	OVER-ARCHING MITIGATION MEASURES ARISING FROM THE SIFP SEA	268
TABLE 9.3	OVER-ARCHING MITIGATION MEASURES ARISING FROM THE SIFP AA	270
TABLE 9.4	SITE-SPECIFIC MITIGATION MEASURES AND THEIR INCORPORATION INTO THE DRAFT COUNTY DEVELOPMENT PLAN	272
TABLE 9.5	MITIGATION MEASURES SPECIFIC TO THE RENEWABLE ENERGY STRATEGY	309
TABLE 9.6	LNDR ADDITIONAL MITIGATION MEASURES	315
TABLE 10.1	STRATEGIC ENVIRONMENTAL OBJECTIVES, TARGETS AND INDICATORS	320

List of Appendices

Appendix A – Detailed Assessment of Plan Objectives

Appendix B – Detailed Assessment of land-use zonings and site specific development objectives

Appendix C – (Tables 8.2 – 8.5) – Detailed Assessment of cumulative and in-combination effects

Appendix D – Ministerial Direction

Abbreviations

ACA	<i>Architectural Conservation Area</i>
CCDP	<i>Clare County Development Plan</i>
cSAC	<i>Candidate Special Area of Conservation</i>
CSO	<i>Central Statistics Office</i>
DoCCAE	<i>Department of Communications, Climate Action and Environment</i>
DoAHRRGA	<i>Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs</i>
EDEN	<i>Environmental Data Exchange Network</i>
EEA	<i>European Environmental Agency</i>
EIA	<i>Environmental Impact Assessment</i>
ER	<i>Environmental Report</i>
EU	<i>European Union</i>
GHG	<i>Green House Gas Emissions</i>
GIS	<i>Geographical Information Systems</i>
GSi	<i>Geological Survey of Ireland</i>
HDA	<i>Habitats Directive Assessment</i>
IGHP	<i>Irish Geological Heritage Programme</i>
IPCC	<i>Integrated Pollution Prevention and Control</i>
LCEA	<i>Limerick Clare Energy Agency</i>
MWRA	<i>Mid West Regional Authority</i>
MWRPG's	<i>Mid West Regional Planning Guidelines</i>
NDP	<i>National Development Plan</i>
NGO	<i>Non Governmental Organisation</i>
NHA	<i>Natural Heritage Area</i>
NIAH	<i>National Inventory of Architectural Heritage</i>
NPWS	<i>National Parks and Wildlife Service</i>
NRA/NTA	<i>National Roads Authority/National Transport Authority</i>
NREAP	<i>National Renewable Energy Action Plan</i>
NEEAP	<i>National energy Efficiency Action Plan</i>
NSS	<i>National Spatial Strategy</i>
NTS	<i>Non Technical Summary</i>
OPW	<i>Office of Public Works</i>
P/P	<i>Plan/Programme</i>
PE	<i>Population Equivalent</i>
pNHA	<i>Proposed Natural Heritage Area</i>
PPP	<i>Public Private Partnership</i>
PRP	<i>Pollution Reduction Programmes</i>
RBD	<i>River Basin District</i>
RBMP	<i>River Basin Management Plans</i>
RMP	<i>Record of Monuments and Places</i>
RPGs	<i>Regional Planning Guidelines</i>
RPS	<i>Record of Protected Structures</i>
S.I. No.	<i>Statutory Instrument Number</i>
SAA	<i>Shannon Airport Authority</i>

<i>SAC</i>	<i>Special Area of Conservation</i>
<i>SDZ</i>	<i>Strategic Development Zone</i>
<i>SEA</i>	<i>Strategic Environmental Assessment</i>
<i>SEO</i>	<i>Strategic Environmental Objective</i>
<i>SFRA</i>	<i>Strategic Flood Risk Assessment</i>
<i>SIRBD</i>	<i>Shannon International River Basin District</i>
<i>SO₂</i>	<i>Sulphur dioxide</i>
<i>SPA</i>	<i>Special Protection Area</i>
<i>SuDS</i>	<i>Sustainable Drainage Systems</i>
<i>WFD</i>	<i>Water Framework Directive</i>
<i>WMU</i>	<i>Water Management Units</i>
<i>WRBD</i>	<i>Western River Basin District</i>
<i>WSIP</i>	<i>The Water Services Investment Programme</i>
<i>WWTP</i>	<i>Waste Water Treatment Plant</i>

Glossary

Alternatives (Reasonable)	Alternatives should take into account the objectives and geographical scope of the Plan or project (P/P). There can be different ways of fulfilling the P/P objectives, or of dealing with environmental problems. The alternatives should be realistic, capable of implementation and should fall within the legal and geographical competence of the authority concerned.
Appropriate Assessment	An assessment of the effects of a plan or project on the Natura 2000 network. The Natura 2000 network comprises Special Protection Areas under the Birds Directive, Special Areas of Conservation under the Habitats Directive and Ramsar sites designated under the Ramsar Convention (collectively referred to as European sites).
Baseline environment	A description of the present state of the environment of the P/P area.
Baseline Survey	Description of the existing environment against which future changes can be measured.
Biodiversity and Flora and Fauna	Biodiversity is the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems' (United Nations Convention on Biological Diversity 1992). Flora is all of the plants found in a given area. Fauna is all of the animals found in a given area.
Biotic Index Values (Q Values)	The Biotic Index Values, or Q values, are assigned to rivers in accordance with biological monitoring of surface waters - low Q ratings, as low as Q1, are indicative of low biodiversity and polluted waters, and high Q ratings, as high as Q5, are indicative of high biodiversity and unpolluted waters. Good status as defined by the Water Framework Directive equates to approximately Q4 in the national scheme of biological classification of rivers as set out by the Environmental Protection Agency.
Birds Directive	Council Directive of 2nd April 1979 on the conservation of wild birds (79/409/EEC).
Built Environment	Refers to both architectural heritage and archaeological heritage.
Cumulative Effects	Effects on the environment that result from incremental changes caused by the strategic action together with other past, present, and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space
Data	Includes environmental data, proxy data, any other relevant statistical data.
Ecology	The study of relationships between living organisms and between organisms and their environment (especially animal and plant communities), their energy flows and their interactions with their surroundings.
Environmental Assessment	The preparation of an environmental report, the carrying out of consultations, the taking into account of the environmental report and the results of the consultations in decision-making and the provision of information on the decision (in accordance with Articles 4 to 9 of the SEA Directive).
Environmental Characteristics	Environmental resources, issues and trends in the area affected by the P/P.

Environmental Impact Assessment (EIA)	An ordered exercise designed to enable the environmental impacts of a proposed development/project to be anticipated before the project is carried out.
Environmental Impact Statement (EIS)	A statement of results from the ordered exercise which focuses on anticipating all environmental impacts of significance of a proposed development, prior to implementation or construction, and which specifies those measures which should be taken to eliminate or mitigate such impacts to an acceptable level.
Environmental indicator	An environmental indicator is a measure of an environmental variable over time, used to measure achievement of environmental objectives and targets.
Environmental objective	Environmental objectives are broad, overarching principles which should specify a desired direction of environmental change.
Environmental Problems	Annex I of Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment (the Strategic Environmental Assessment Directive) requires that information is provided on 'any existing environmental problems which are relevant to the plan or programme', thus, helping to ensure that the proposed strategic action does not make existing environmental problems worse. Environmental problems arise where there is a conflict between current environmental conditions and ideal targets. If environmental problems are identified at the outset they can help focus attention on important issues and geographical areas where environmental effects of the plan or programme may be likely.
Environmental Receptors	Include biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological) and landscape as listed in the SEA Directive. This list is not exhaustive, and can include other receptors which may arise for a particular P/P.
Environmental Report (ER)	A document required by the SEA Directive as part of an environmental assessment which identifies, describes and evaluates the likely significant effects on the environment of implementing a plan or programme.
Environmental Targets	A target usually underpins an objective often having a time deadline that should be met and should be accompanied by limits or thresholds.
Environmental Vectors	Environmental vectors are 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.
Evolution of the Baseline	A description of the future state of the baseline in the absence of a plan or programme assuming 'business as usual' or 'do nothing' scenarios, depending on which is more reasonable for the P/P being proposed.
Geographical Information System (GIS)	is a computer system that collects, stores, views and analyses geographical information and commonly creates maps as an output
Geology	Science of the earth, including the composition, structure and origin of its ROCKS
Habitat	Area in which an organism or group of organisms live.

Habitats Directive	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
Habitats Directive Assessment	An assessment of the effects of a plan or project on the Natura 2000 network. The Natura 2000 network comprises Special Protection Areas under the Birds Directive, Special Areas of Conservation under the Habitats Directive and Ramsar sites designated under the Ramsar Convention (collectively referred to as European sites)
Hierarchy of Plans	Both higher and lower level P/P relevant to the P/P being assessed.
Indirect effect	Any aspect of a P/P that may have an impact (positive or negative) on the environment, but that is not a direct result of the proposed P/P. May also be referred to as a secondary effect
Interrelationships	Associations or linkages, related to environmental impact of the proposed P/P usually on environmental receptors.
Issues Paper	Paper produced as part of the consultation process, usually for Land Use Plans, to facilitate consultation with stakeholders on key issues.
Key environmental issues	Those significant environmental issues, which are of particular relevance and significance within a P/P area and/or the zone of influence of that P/P. These issues should be identified during SEA Scoping process.
Key environmental receptors	Aspects of the environment likely to be significantly impacted by the proposed P/P.
Material Assets	Critical infrastructure essential for the functioning of society such as: electricity generation and distribution, water supply, wastewater treatment transportation etc.
Member States	Those countries that belong to the European Union.
Mitigate	To make or become less severe or harsh
Mitigation Measures	Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration should be given in the first instance to preventing such effects or, where this is not possible, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: avoid effects; reduce the magnitude or extent, probability and/or severity of effects; repair effects after they have occurred; and compensate for effects, balancing out negative impacts with other positive ones.
Monitoring	A continuing assessment of environmental conditions at, and surrounding, the plan or programme. This determines if effects occur as predicted or if operations remain within acceptable limits, and if mitigation measures are as effective as predicted. The primary purpose of monitoring is to identify significant environmental effects which arise during the implementation stage against those predicted during the plan preparation stage.
Monitoring Programme	A detailed description of the monitoring arrangements to be put in place to carry out the monitoring of the impact of the proposed P/P on the environment including; frequency of monitoring, who has responsibility for monitoring, and responses if monitoring identifies significant negative impacts.
Natura 2000 Site	Designated European Site. In combination Special Areas of Conservation and Special Protection Areas will constitute Natura 2000

	network of protected sites for habitats and species across the EU.
Natural Heritage	Refers to habitats and species of flora and fauna.
Non-technical summary	A summary of the findings of the ER, summarized under the headings listed in Annex 1 of the SEA Directive that can be readily understood by decision-makers and by the general public. It should accurately reflect the findings of the ER.
Plan or Programme	<p>Including those co-financed by the European Community, as well as any modifications to them:</p> <ul style="list-style-type: none"> - which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and - which are required by legislative, regulatory or administrative provisions. <p>In accordance with the SEA Directive, P/P that require SEA are those that fulfil the conditions listed in Article 2(a) and Article 3 of the SEA Directive.</p>
Post-mitigation residual impacts	Environmental effects that remain after mitigation measures have been employed.
Protected Structure	Protected Structure is the term used in the Planning Act of 2000 to define a structure included by a planning authority in its Record of Protected Structures. Such a structure shall not be altered or demolished in whole or part without obtaining planning permission or confirmation from the planning authority that the part of the structure to be altered is not protected.
Proxy data	Is a measure of activity resulting from a P/P which provides information on environmental impact without the need for a direct measure of an environmental receptor. For example, an increase in the number of vehicles (activity resulting from a P/P) can provide information on the impact on air quality and greenhouse gases without having to measure the concentration of these parameters in the receiving environmental receptor.
Public	One or more natural or legal persons and, in accordance with national legislation or practice, their associations, organisations or groups.
Recorded Monument	A monument included in the list and marked on the map which comprises the Record of Monuments and Places that is set out County by County under Section 12 of the National Monuments (Amendment) Act, 1994 by the Archaeological Survey of Ireland. The definition includes Zones of Archaeological Potential in towns and all other monuments of archaeological interest which have so far been identified. Any works at or in relation to a recorded monument requires two months notice to the Department of the Environment, Heritage and Local Government under section 12 of the National Monuments (Amendment) Act, 1994.
Scoping	The process of deciding the content and level of detail of an SEA, including the key environmental issues, likely significant environmental effects and alternatives which need to be considered, the assessment methods to be employed, and the structure and contents of the Environmental Report.
Screening	The determination of whether implementation of a P/P would be likely to have significant environmental effects on the environment. The process of deciding whether a P/P requires SEA.

SEA Directive	Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment'.
SEA Statement	A statement summarising: - how environmental considerations have been integrated into the P/P - how the ER, the opinions of the public and designated authorities, and the results of transboundary consultations have been taken into account - the reasons for choosing the P/P as adopted in the light of other reasonable alternatives.
Secondary effect	Effects that are not a direct result of the P/P, same as indirect effect.
Sensitivity	Potential for significant change to any element in the environment that is subject to impacts.
Short-term effects	These are typical of those effects that may occur during construction stage of a development, for example, the increased traffic going to and from a site during construction, or, the noise associated with construction activities.
Significant effects	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.
SPA	Special Protection Area under Birds Directive (79/409/EEC), designated for bird species listed in Annex I of the Directive, in particular internationally important concentrations of migratory and wetland birds. Designation is focused on habitats of these species.
Statutory Authority	The authority by which or on whose behalf the plan or programme is prepared.
Statutory Instrument	Any order, regulation, rule, scheme or bye-law made in exercise of a power conferred by statute.
Strategic Actions	Strategic actions include: Policies, which may be considered as inspiration and guidance for action and which set the framework for plans and programmes; Plans, sets of co-ordinated and timed objectives for the implementation of the policy; and Programmes, sets of projects in a particular area.
Strategic Environmental Assessment (SEA)	Strategic Environmental Assessment (SEA) is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt it. 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
Strategic Environmental Objective (SEO)	Strategic Environmental Objectives (SEOs) are methodological measures which are developed from international, national and regional policies which generally govern environmental protection objectives and against which the environmental effects of the County Development Plan can be tested. The SEOs are used as standards against which the objectives of the County Development Plan can be

	evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if not mitigated.
Synergistic effect	Effects that, when totalled, result in a greater or lesser effect than the sum of the individual effects.
Threshold	Magnitude of a project, which if exceeded, will trigger the requirement for an Environmental Impact Assessment.
Transboundary Consultation	If a plan or programme is being prepared that is likely to have significant effects on the environment in another Member State, or where a Member State likely to be significantly affected so requests, the Member State in whose territory the plan or programme is being prepared shall, before the plan or programmes adoption or submission to the legislative procedure, forward a copy of the Plan or programme and the relevant environmental report to the other Member State.
Zone of Influence	The area over which a plan can impact on the environment.

Chapter One – Introduction

1.1 Purpose of this Report

This Environmental Report has been prepared as part of the Strategic Environmental Assessment of the **Clare County Development Plan 2017-2023** in accordance with national and EU legislation. It sets out how the SEA has been undertaken and presents the findings of the assessment of the policies and objectives coupled with an assessment of the settlements identified in the CDP together with its reasonable alternatives.

The Environmental Report complies with the requirements of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) as implemented in Ireland through Statutory Instrument (SI) No. 435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended). These regulations are a statutory requirement for plans or programmes which could have significant environmental effects, and the assessment process aims to identify where there are potential effects and how any negative effects might be mitigated.

The assessment and Environmental Report have been completed by Clare County Council and informed by the associated Natura Impact Report prepared by Scott Cawley Ltd on behalf of Clare County Council.

1.2 Background

The County Development Plan sets out an overall strategy for the proper planning and sustainable development of the County over a six year period. This will be the 7th County Development Plan to be prepared since 1964. The new County Development Plan is a strategic document setting the vision and direction for the future development of County Clare for the benefit of all its citizens up to 2023. The existing County Development Plan was adopted on the 10th January, 2011. Section 11 of the Planning and Development Act, 2000 (as amended) requires the Planning Authority to prepare a new Development Plan every six years for its jurisdiction and to commence working on a new plan within 4 years of its adoption of the plan. As the current plan was adopted on the 10th January 2011, the process of review commenced on the 9th of January 2015 with the publication of an Issues Booklet, public notice followed by public consultation sessions.

This new County Development Plan differs in that it incorporates lands previously within the remit of, and governed by the Ennis and Environs Development Plan 2008-2014 and the Kilrush Development Plan 2014 -2020. On adoption the new County Development Plan will govern the overall development of the County including the town of Ennis and Kilrush.

1.2.1 County Clare

County Clare is situated on the west coast of Ireland in the province of Munster, covering an area of 318,784 hectares (787,715 acres) and home to a population of 117,196 (Census 2011). It is bounded by the counties of Galway to the north, Tipperary to the east and Limerick to the south. Its natural boundaries comprise of Galway Bay to the north, the River Shannon and Lough Derg to the east and the Shannon Estuary to the south and the Atlantic seaboard to the west.

The County has a diverse topography, varying from bare limestone pavement to estuarial mudflats and from high Atlantic cliffs to inland water ways and lakes. The County's coastline is 360km in length. Much of the county has underlying limestone strata which is highly permeable. County Clare is noted for its agriculture, tourism and landscapes including the Burren National Park, renowned for its physical and cultural heritage.

Ennis is the County town and the administrative centre of County Clare as well as a designated Hub town. Shannon is a large town in the south of the County and is a major industrial and employment centre for the whole Mid-West region and is a designated Gateway under the National Spatial Strategy. The towns of Kilrush, Ennistymon and Scarriff provide services for the surrounding hinterland.

The County is well served by air, road and rail transport facilities. Shannon International Airport caters for over 2 million passengers per year providing services to the UK, Europe and USA. Strategic road access is provided by the Ennis by-pass and the N18/M18 motorway, creating easy connectivity with the rest of the country. The Western Rail Corridor provides regular daily commuter services between Ennis and Limerick to Dublin and between Ennis and Athenry and Galway. Marine access and transport is provided for at Moneypoint, Killimer, Shannon Airport and harbours along the Atlantic coastline. The potential for greater accessibility along the deepwaters of the Shannon estuary has been subject of the Strategic Integrated Framework Plan for the Shannon Estuary.

Commerce and trade are the greatest source of employment in the County. Outside the Industrial/business, retail and administrative employment centres of Shannon, Ennis and Kilrush, tourism and agriculture are two of the primary industries in the County.

The physical, social and community infrastructure in the towns and villages around the County continue to be progressed.

As per Volume 3 the county is split into 4 Municipal Districts within which the settlements are contained as per Figure 1.1.

Volume 3 – Municipal District Settlement Plans

This volume contains individual settlement plans and land use zoning details for each of the towns and villages in the municipal districts of the County as follows:

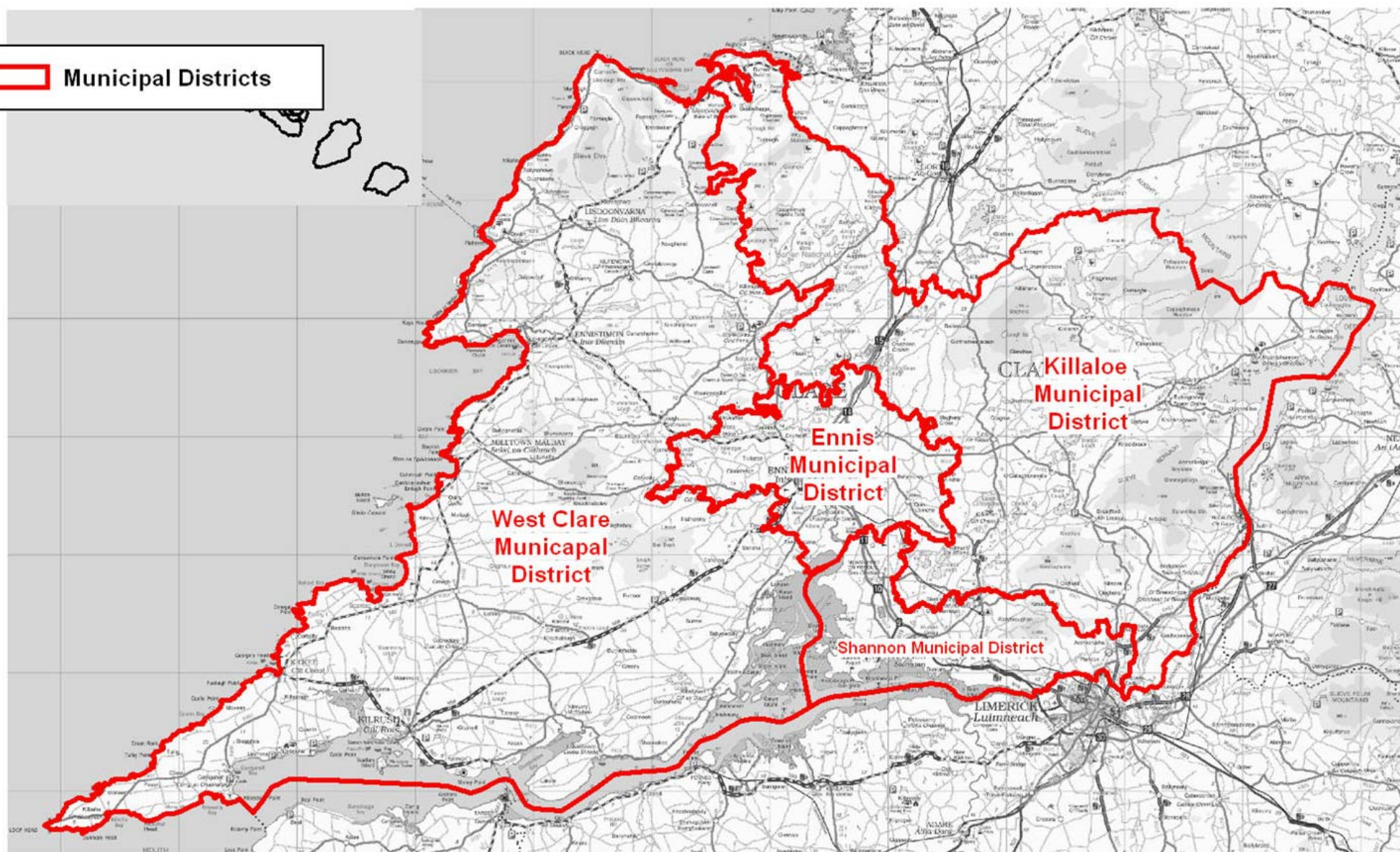
Volume 3(a) – Ennis Municipal District Settlement Plans

Volume 3(b) – Shannon Municipal District Settlement Plans

Volume 3(c) – Killaloe Municipal District Settlement Plans

Volume 3(d) – West Clare Municipal District Settlement Plans

 Municipal Districts



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 1.1 Study Area

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

1.2.2 Interaction with Other Relevant Plans and Programmes

As part of the SEA process, the context of the Clare County Development Plan 2017-2023 must be established with regard to other plans and programmes that have been adopted at the International, European, National and Regional levels. The purpose of the review is to take into consideration the legislative and policy framework within which the Clare County Development Plan 2017-2023 must comply.

1.2.3 Planning Hierarchy

Within Ireland, planning legislation is set out in the Planning and Development Act 2000, as amended, and the principal regulations relating to the Acts are outlined in the Planning and Development Regulations 2001, as amended. The Development Plan lies within a clear hierarchy of spatial policy documents including strategies, policies and plans emanating from the high level International and European level which feeds down progressively to national, regional, county and local level plans and policies. There is therefore a predetermined set of policies and strategic options which the Development Plan must adhere to. The Development Plan will be affected by, and will in turn affect a wide range of other relevant plans and programmes and environmental objectives and it is important to identify these in the context of SEA.

In the context of the overall planning decision-making hierarchy and key relevant Plans and Programmes as illustrated in Fig 2.1, the County Development Plan is located towards the lower level.

Relevant plans and strategies in the national context is as follows:

- National Development Plan (NDP);
- National Spatial Strategy (NSS), including the new National Spatial Strategy;
- Regional Planning Guidelines (RPGs);
- **County and Town Development Plans;** and
- Local Area Plans and Integrated Area Plans.

The Development Plan informs local level planning strategies such as Local Area Plans and Integrated Area Plans and will itself be informed by the NDP, NSS and RPGs. Within the Mid West Regional Planning Guidelines, County Clare is divided into a number of zones for the purposes of future planning. In addition Ennis is outlined as a hub town and Shannon as a gateway, linked with Limerick City. Ennistymon, Scarriff and Kilrush are all identified as key service towns.

Figure 1.2 Key Relevant Legislation, Plans and Programmes

International Level	Water Framework Directive	Influencing Predetermined Conditions
	Floods Directive	
	SEA Directive	
	Marine Strategy Framework Directive	
	Habitats Directive	
	Birds Directive	
	Freshwater Fish Directive	
	Bathing Water Directive	
	Drinking Water Directive	
	EIA Directive	
	Groundwater Directive	
	Seveso Directive	
	Urban Waste Water Treatment Directive	
	Nitrates Directive	
	Shellfish Waters Directive	
	IPPC Directive	
	Waste Framework Directive	
National Level	National Development Plan	
	National Spatial Strategy	
	National Climate Change Strategy	
	Government White Paper – Delivering A Sustainable Energy Future for Ireland	
	The Planning System and Flood Risk Management Guidelines for Planning Authorities	
	National Biodiversity Plan	
	National Catchment Flood Risk Assessment Programme	
	Climate Action and Low Carbon Development Bill	
	National Climate Change Adaption Framework Building Resistance to Climate Change 2012	
	Draft National Landscape Strategy	
	2025 Draft Agri Food Strategy Committee Report	
	Irish Offshore SEA 5 (IOSEA5)	
	Draft National Peatland Strategy	
	Draft Raised Bog NHA Management Plans	
	Draft Raised Bog NHA Review	
	National Seafood Operation Programme, DAFM	
Regional Level	River Basin Management Plans	
	Catchment Flood Risk Management Plans	
	Mid-West Regional Planning Guidelines 2010-2022	
	Regional Development Strategies/Plans	
	Southern Region Waste Management Plan 2015 - 2021	
	Mid-West Area Strategic Plan	
	Strategic Integrated Framework Plan for the Shannon Estuary	
	Retail Strategy for the Mid West Region 2010-2016	
	Limerick and Clare Physical Recreation Study (June 2013)	
	Off-Shore Renewable Energy Development Plan	

Local Level**Clare County Development Plan 2017-2023**

Ennis and Environs Development Plan 2008-2014
 Draft Ennis and Environs Local Area Plan 2015-2021
 Kilrush Town and Environs Development Plan 2014-2020
 North Clare Local Area Plan 2011-2017
 East Clare Local Area Plan 2011-2017
 West Clare Local Area Plan 2012-2018
 Shannon Town and Environs Local Area Plan 2012-2018
 South Clare Local Area Plan 2012-2018
 Renewable Energy Strategy 2014-2020
 Heritage Plan 2011-2017
 Biodiversity Plan 2014-2017

Project Level

Environmental Impact Assessment
 Appropriate Assessment
 Planning Permissions
 Discharge consents
 Foreshore Licence
 Dumping at Sea permits

1.2.3 Settlement Hierarchy and Strategy

All the policies and objectives of this Clare County Development Plan 2017-2023 flow from and are consistent with the higher level national and regional policies and strategies. The Core Strategy population target tables set out in **Tables 2.4 to 2.7** of **Chapter 2** of the written statement of the County Development Plan, identify the relevant population figure and housing land requirement for each of the settlements in the Settlement Hierarchy. These population targets and land requirements are reflected in the settlement plans set out in Volume 3 of this development plan.

Strong settlements are the mainstay of a strong county. Vibrant and viable settlements that provide a range of jobs, services and housing choice not only create the basis of strong economies and communities, but also support a greater range of sustainable modes of transport, both within and between settlements. The development of a range of settlements that work together to the benefit of the county and all its inhabitants, including those in rural areas, can only occur in a planned way. The main tool of achieving this is a Settlement Strategy based on the Core Strategy which will enable the proper planning and sustainable development of towns, villages and rural areas.

The Settlement Strategy for County Clare is outlined in full in **Chapter 3** of the written statement of the County Development Plan. It gives effect to the NSS and MWRPGs and will act as a guide to the location and scale of new development. There is a clear link between the Settlement Hierarchy and the role of the Hub of Ennis and Gateway of Shannon; the population target for the county, the designation of Service Towns as set out in the Mid-West Regional Planning Guidelines 2010-2022 and the population targets and housing requirements for each settlement in the County Clare Settlement Hierarchy.

Moreover the Settlement Strategy is consistent with the Sustainable Rural Housing Guidelines and the Mid-West Regional Planning Guidelines 2010-2022 while responding to the specific rural

typology of County Clare. The MWRPGs seek to achieve balanced growth in the different parts of County Clare so that viable communities can be retained and that the quality of life of all citizens can be enhanced. The rural Settlement Strategy set out in **Chapter 3** of the written statement of the county development plan identifies rural areas under strong urban pressure which are primarily located along the Limerick-Shannon-Ennis-Galway M18/N18 road corridor, around the Service Towns and along the coastline and Lough Derg. The remaining areas comprise an intricate mix of structurally weak or strong agricultural areas as defined in the Sustainable Rural House Guidelines.

The Settlement Hierarchy and Strategy for County Clare have been devised according to the following key aspects of the NSS:

- The spatial structure set out in the strategy in relation to the Mid-West region including the designation of the Limerick/Shannon Gateway and Ennis Hub Town;
- The complementary role of other towns and villages;
- The role of linkages in terms of good transport, communications and energy networks;
- Distinction between rural generated housing and urban generated housing;
- Suggested range of policy responses for different rural areas; and
- The spatial planning framework to support sustainable rural settlement.

Additionally, in order to achieve balanced county-wide growth, the Settlement Strategy was prepared having regard to availability of services, transport and infrastructure. Regard was also had to the SEA and AA processes. There are types of rural areas identified in the Plan area – ‘rural areas under strong urban pressure’ and ‘rural areas that are structurally weak or with a strong agricultural economic base’. These areas were classified based on an analysis of a range of socio-economic variables including population profile, labour-force, travel-to-work distances and an analysis of rural housing statistics. The settlement policy for rural housing in both of these areas is set out in Chapter 3 (Urban and Rural Settlement Strategy). These settlement policies are consistent with ‘Sustainable Rural Housing – Guidelines for Planning Authorities (2005).

The range of locations in County Clare from the County Town of Ennis, the service towns of Kilrush, Scarriff/Tuamgraney and Ennistymon/Lahinch, to the smaller towns, rural villages, clusters and countryside is called the Settlement Hierarchy and is outlined in **Figure 1.3** and **Table 1.1** below. The Hierarchy is based not only on population, but on a variety of strategic long-term planning and land use concerns including: the capacity of individual areas to accommodate growth; availability of road, rail and air transport; availability of water and waste water services; availability of education facilities; and the requirement to revitalise rural areas. In addition, the requirements of the Strategic Environmental Assessment (SEA) process informed the preparation of the Settlement Hierarchy.

County Town/Hub Ennis
Linked Gateway Shannon
Service Towns Kilrush, Ennistymon/Lahinch, Scarriff/Tuamgraney
Small Towns Killaloe, Sixmilebridge, Tulla, Newmarket-on-Fergus, Miltown Malbay, Lisdoonvarna and Kilkee.
Large Villages Ardnacrusa, Athlunkard, Ballycannon North (Meelick), Ballyvaughan, Barefield, Bridgetown, Broadford, Bunratty, , Carrigaholt, Clarecastle, Clonlara, Cooraclare, Corofin, Cratloe, Crusheen, Doolin, Doonbeg, Feakle, Inagh, Kiladysert, Kilfenora, Kilkishen, Kilmaley, Kilmihil, Kilmurphy, Labasheeda, Lissycasey, Mountshannon, Mullagh, O'Briensbridge, Parteen, Quilty, Quin, Whitegate
Small Villages Ballinruan, Ballyea, Ballynacally, Bellharbour, Bodyke, Boston, Caher, Cappa (Kilrush), Carron, Clooney, Connolly, Cranny, Creegh, Cross, Doonaha, Fanore, Flagmount, Inch, Kilbaha, Kilbane, Killanena, Killimer, Kilmurphy, McMahon, Kilnaboy, Kilnamona, Kilshanny, Knock, Knockerra, Liscannor, Moy, Moyasta, O'Callaghans Mills, Ogonelloe, Querrin, Ruan, Spanish Point, Toonagh, Tubber
Clusters Ardkyle, Ballaghboy No.1, Ballaghboy 2, Ballinooskey/Lisconner, Ballintlea South, Ballintlea South 2, Ballycar, Ballycorick, Ballyduff, Ballyea South, Ballyfaudeen, Ballyhannon North, Ballyhannon South No.1, Ballyhannon South No.2, Ballygireen, Ballymacahill, Ballymorris, Ballynagun West, Ballyveskil/Tiermaclane, Ballyvonnavaun/Deerpark, Ballyvrislaun, Barntick, Barloughra, Bartra, Bealaha, Bearnafunshin/Ballyogan, Beevrack, Behagh, Buncraggy, Caherea, Caherush, Cappa (Sixmilebridge), Carrowmeer, Castlecrine, Castlequarter, Castlequarter Kilkeedy, Cloonadrum, Cloonanaha, Cloonoughter, Coogyulla Cross, Coolisteige, Cratloekeel, Crosses of Annagh, Deerpark/Corlack, Doonass, Drumandoora, Drumdrehid, Drumeen, Drumline 1, Drumline 2, Drummina, Drumquin, Finvarra, Garraun, Garraunboy, Gilloge, Kildorus, Killeenan, Killow/Knockanimana, Kilmore, Kineilty, Knockfin, Leamaneigh More, Lisduff, Lisheen, Luogh South, Manusmore, Maurices Mills, Meelick, Monaskeha, Mooghaun North, Mortyclough, Mountrivers Cluster, Murrooghkilly, Murroughtoohey South, New Quay, Newtown Cloonlara, Noughaval, Portdrine, Poulawillin, Rockforest/Aughrim, Roo East, Sooreeny, South of Rossmanagher Bridge, Spancill Hill, Streamstown, The Wells Cluster, Tromra, Urlan More/Bellsfort Cluster, Williamstown, Woodpark Cluster.
Countryside The countryside are those parts of County Clare outside of recognised settlements

Table 1.1 Settlement Hierarchy in County Clare

 County Outline

 ENNIS (COUNTY TOWN / HUB)

 SHANNON (LINKED GATEWAY)

 SERVICE TOWNS

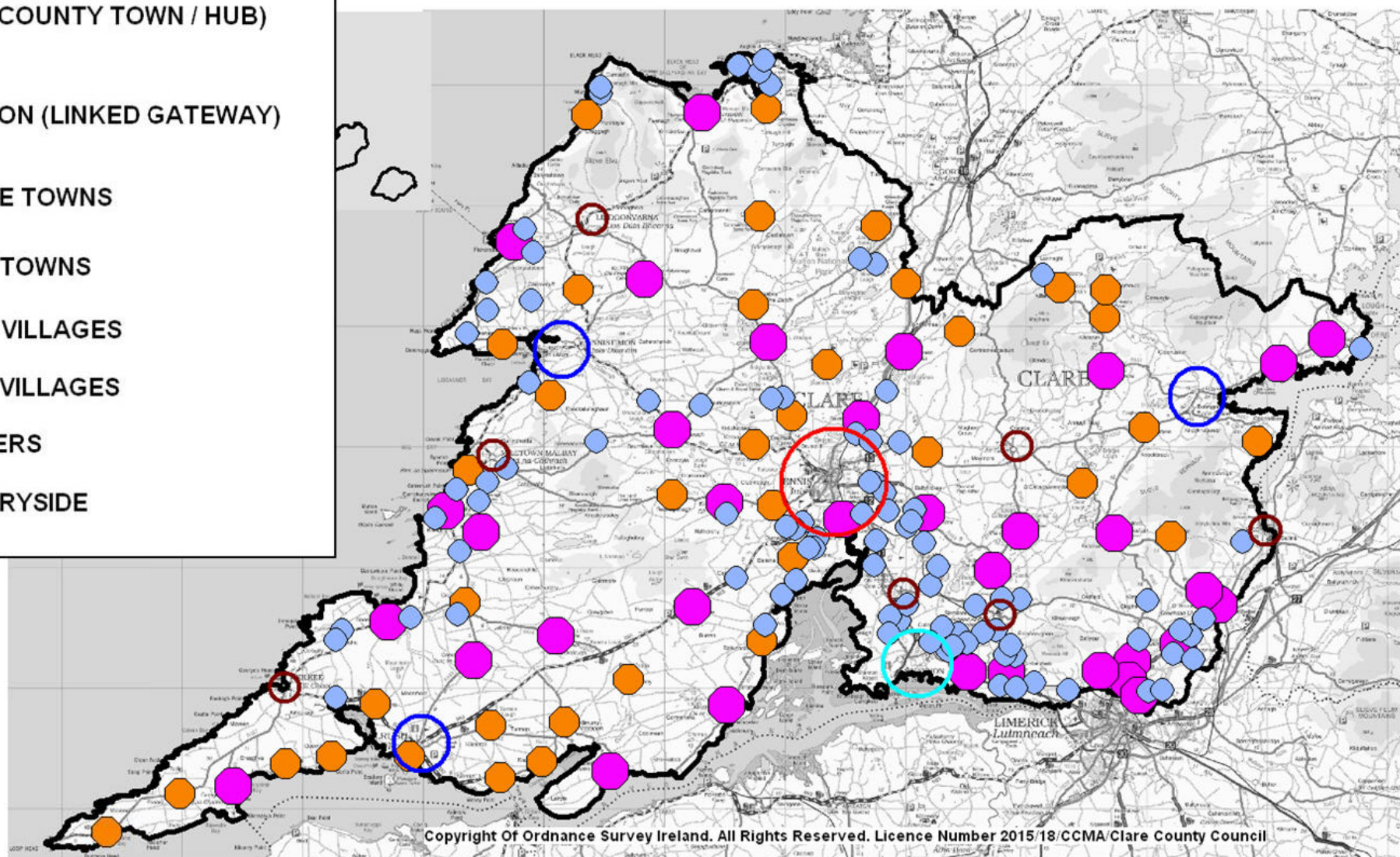
 SMALL TOWNS

 LARGE VILLAGES

 SMALL VILLAGES

 CLUSTERS

 COUNTRYSIDE



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 1.3 Settlement Hierarchy

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

1.3 Nature of Zonings

At the outset, it should be noted that a development proposal that complies, in principle, with the relevant land use zoning, will not automatically be guaranteed or granted planning permission. Clare County Council shall consider each proposal for development on its individual merits having regard to Section 34 of the Planning and Development Act 2000 (as amended).

The following describes the individual zonings proposed in each of the settlement plans/local area plans:

Agriculture

This zone is for the use of land for agricultural purposes and farming-related activities. Individual dwellings for permanent occupancy for family members of the landowner will be open for consideration subject to the objectives set out in Chapter 3 of this plan and normal site suitability considerations.

Airport

Land zoned for airport development shall be used for airport-related uses, buildings, infrastructure and services and compatible aviation-related businesses and industries.

Buffer Space

Buffer spaces are intended to provide a buffer of undeveloped land for the conservation of biodiversity, visual amenity or green space. Buffer spaces may include natural features such as floodplains, riparian zones, turloughs, valuable biodiversity areas included designated sites, amenity areas, woodlands, hedgerows, green spaces and archaeological features.

Commercial

The use of land zoned for ‘commercial’ purposes shall be taken to include the use of the lands for commercial and business uses including offices, service industry, warehousing and the facilitation of enterprise/retail park/office type uses as appropriate. Retailing is open for consideration in this area, provided that a sequential test is carried out and the lands are demonstrably the optimum location for the nature and quantum of retail development.

Community

The development of lands for community uses shall be taken to include the use of lands for community, civic, health services, public or educational uses including the provision of schools, community halls, healthcare facilities and any other facility that is intended to provide some form of community service. Public or private delivery is not a factor in this case.

Enterprise

Lands zoned for ‘enterprise’ shall be taken to include the use and development of land for high-end research and development, business, science and technology based industry, financial services, call

centres/telemarketing, software development, enterprise and incubator units, small/medium manufacturing or corporate offices in high quality campus/park type development.

It is intended that such developments will have high quality architectural design and landscaping. This zoning allows for ‘walk to’ support facilities such as canteen, restaurant or crèche services which are integrated into employment units and are of a nature and scale to serve the needs of employees on the campus.

This zoning also allows for associated transportation infrastructure such as car and bicycle parking and bus stop shelters. This zoning excludes general retail, retail park outlets, motor sales/servicing activities and heavy industrial undertakings

Existing Residential

The objective for land zoned ‘existing residential is to conserve and enhance the quality and character of the areas, to protect residential amenities and to allow for small scale infill development which is appropriate to the character and pattern of development in the immediate area and uses that enhance existing residential communities. Existing residential zoned land may also provide for small scale home-based employment uses where the primary residential use will be maintained.

General Industry

The use of land for general industry uses shall be taken to include the use for industrial processing or manufacturing of a scale and nature where there is significant goods, manufacturing and related issues. Uses of this nature may result in the generation of emissions.

This type of industrial activity may also be subject to the SEVESO Directives, the main EU legislation dealing with the control of on-shore major accident hazards involving dangerous substances.

A mix of uses such as office-based or retail development is not considered appropriate in areas zoned for industrial development.

Light Industry

The use of land for light industry shall be taken to include uses where the primary activity is the manufacture of a physical product. The use for industry/manufacturing, incubator units, distribution, open storage, transport operating centres and the treatment/recovery of waste material is acceptable.

Processes carried out, or the machinery/plant installed on land zoned for Light Industry must be such that could be carried out or installed without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit. Uses such as office-based development or retail development are not considered appropriate in areas zoned for light industry, save where it is ancillary to the main use of the development.

Low Density Residential

This zoning refers to the use of lands to accommodate a low density pattern of residential development, primarily detached family dwellings. The underlying priority shall be to ensure that the character of the settlement/area is maintained and further reinforced by a high standard of design. Proposed developments must also be appropriate in scale and nature to the areas in which they are located.

Marine-Related Industry

Land zoned for marine-related industry shall provide for marine-related industry and large-scale uses that create a synergy with the marine use. Marine-related industry shall be taken to include the use of land for industry that, by its nature, requires a location adjacent to estuarine/deep water including a dependency on marine transport, transshipment, bulk cargo or where the industrial processes benefit from a location adjacent to the marine area.

Maritime/Harbour

The use of land for maritime/harbour related activity shall be taken to include the use of land, including harbours and piers, that will facilitate small-scale, water-based commercial or tourism activity and associated facilities including car parking facilities.

Neighbourhood Centre

It is intended that land zoned for 'neighbourhood centre' will be developed to provide an appropriate range of local services including commercial, retail and community uses, to support the population of the surrounding area.

Open Space

It is intended that lands zoned 'open space' will be retained as undeveloped open space, mainly for passive open space related activities. The open space/park areas could contain active play facilities such as children's play areas but these would only be a small component of the overall areas involved.

Recreation

This category of zoning provides for the use of land for the provision of sports grounds/playing pitches, golf courses, tennis courts and other active indoor and outdoor recreational facilities that contribute to meeting the leisure, recreation and amenity needs of the immediate community and/or the wider area.

Residential

Residential use shall be taken to primarily include the use of land for domestic dwellings. It may also provide for a range of other uses particularly those that have the potential to foster the development of new residential communities e.g. schools, crèches, open spaces etc.

Tourism

Land zoned for tourism development shall be used for a range of structures and activities which are primarily designed to facilitate tourism development and where uses are mainly directed at servicing tourists/holiday makers and visiting members of the public.

Mixed Use

The use of land for ‘mixed use’ developments shall include the use of land for a range of uses, making provision, where appropriate, for primary and secondary uses e.g. commercial/retail development as the primary use with residential development as a secondary use. Secondary uses will be considered by the local authority having considered the particular character of the given area.

In town centres areas that have been zoned mixed-use a diverse range of day and evening uses is encouraged and an over-concentration of any one use will not normally be permitted.

Transport Utilities

It is intended that land zoned ‘transport utilities’ will be reserved for the provision of infrastructure required to move people and goods by rail, bus, car or bicycle including existing and proposed train stations, bus stations and coach parks.

University Zone

It is intended that lands identified as ‘University Zone’ will be reserved to accommodate development and uses associated with higher education including research and development, student accommodation, student support services, enterprise/start-up businesses units, recreation and social facilities and open spaces.

Utilities/Infrastructure Safeguard

It is intended that land zoned ‘utilities/infrastructure safeguard’ will be reserved for the existing and future provision of key infrastructural services and the upgrading of existing services and infrastructure relating to road, rail, air, electricity, telecommunications, gas, water and waste water treatment services.

1.4 Zoning Matrix

Appendix 2 of Volume 1 the written statement outlines the Land Use Zoning Matrix for the Clare County Development Plan 2017-2023. This matrix lists the most common forms of development and classifies whether the proposed use is acceptable in principle, or otherwise, on lands that are zoned for a particular use.

‘Permitted in Principle’

‘Permitted in Principle’ means that the proposed use is generally acceptable subject to normal planning process and compliance with the relevant policies, objectives, standards and requirements as set out in the County Development Plan, and by other government bodies/sections, in accordance

with the proper planning and sustainable development of the area. If a proposal is indicated to be 'Permitted in Principle' in the zoning matrix, this does not imply that planning permission will automatically be granted as other factors must be considered and each proposal for development is considered on its individual merits.

'Open for Consideration'

The proposed use may be permitted where the local authority is satisfied that it is in compliance with the zoning objectives, standards and requirements as set out in the County Development Plan and by other government bodies/sections, and will not conflict with the permitted, existing or adjoining land uses in accordance with the proper planning and sustainable development of the area.

'Not Normally Permitted'

The proposed use will not normally be favourably considered by the local authority, except in exceptional circumstances, and in such instances, the development may represent a material contravention of the Plan. This may be due to envisaged negative impacts on existing and permitted uses, incompatibility with policies and objectives contained in the County Development Plan or it may be contrary to the proper planning and sustainable development of the area.

Uses not Listed in the Zoning Matrix

Proposed land uses which are not listed within the land use zoning matrix will be considered on a case-by-case basis having regard to the proper planning and sustainable development of the area and compliance with the relevant policies and objectives, standards and requirements as set out in this Clare County Development Plan 2017 - 2023, guidelines issued by the Department of Environment, Community and Local Government and other government bodies / sections.

'Non-conforming uses'

'Non-conforming uses' are established uses that do not conform to the zoning objectives of the Plan. Generally, the Council will consider reasonable extensions and improvements to premises that accommodate non-conforming uses, provided that it would not be injurious to the amenities of the area and is consistent with the proper planning and sustainable development of the area.

Chapter Two - SEA Methodology

2.1 Introduction

Strategic Environmental Assessment (SEA) is a process for evaluation, at the earliest appropriate stage, the environmental effects of plans or programmes before they are adopted. It also gives the public and other interested parties an opportunity to comment and to be kept informed of decisions and how they were made. An early consideration of environmental concerns in the planning process creates an opportunity for environmental factors to be considered explicitly alongside other factors such as social, technical or economic aspects. SEA became a statutory requirement for certain plans and programmes following the adoption of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive). This was transposed into Irish Law through Statutory Instrument (SI) No. 435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended) and the Planning and Development (SEA) Regulations 2004 (SI No. 436 of 2004) which became operational on the 21st July 2004. SI No. 435 of 2004 was amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendments) Regulations 2011 (SI No. 200 of 2011). Collectively, this legislation is referred to as the “SEA Regulations” for the purposes of this report.

SEA is a key process that promotes sustainable development and highlights significant environmental issues within the planning regime. The purpose of SEA is to formally and systematically evaluate the likely significant effects of implementing a plan or programme, in this instance the Clare CDP. The report identifies the significant environmental effects of the Plan on the environment and where significant effects are identified, recommends appropriate mitigation measures to avoid or reduce such effects. SEA is an iterative process and has informed and influenced the preparation of the Clare CDP throughout the process. This Environmental Report forms part of the SEA of the Clare CDP and documents the SEA process. It is the key consultation document in the SEA process and facilitates interested parties to comment on the environmental issues associated within the Clare CDP. This Environmental Report forms part of the SEA on the Clare CDP and should be read in conjunction with the Clare CDP itself.

2.2 SEA Process

The preparation of the Clare County Development Plan 2017-2023 requires a full SEA as outlined in Chapter 1. The SEA process can be categorised into a number of stages as summarised in **Table 2.1**.

Table 2.1 Summary of the Strategic Environmental Assessment Process

Stage	Comments
Screening	A screening was undertaken to determine the need for environmental assessment of the Clare County Development Plan 2017-2023 taking account of relevant criteria set out in schedule 2A.
Scoping	Scoping was conducted to determine the baseline environmental parameter data and issues to be considered further in the Environmental Report. Submissions received from Environmental Authorities will be incorporated into the Environmental Report.
Consultation with the Environmental Authorities	Consultation will be conducted throughout the SEA process and Plan making process.
Preparation of Environmental Report Clare County Development Plan 2017-2023 including:	<p>A multi disciplinary team is established to create policy consistent documents and to examine the effects on the environment of implementing the Plan.</p> <p>Objectives and land-use zoning included in the Plan will be assessed through- out the Plan making process.</p> <p>Alternative options will be identified and assessed culminating in defining a preferred alternative for the Development Plan.</p> <p>Feedback from on-going Plan preparation process and Environmental Report preparation.</p> <p>Mitigation measures will be discussed and chosen.</p> <p>Monitoring will be incorporated with any existing methods.</p>
Non-Technical Summary	A summary of the findings of the Environmental Report, summarised under the headings listed in Annex 1 of the SEA Directive, which can be readily understood by decision-makers and by the general public. It should accurately reflect the findings of the Environmental Report.
Strategic Environmental Assessment (SEA) Statement	An outline of how environmental considerations are integrated into the Plan; how the Environmental Report, the opinions of the public and statutory authorities and the results of trans-boundary consultations are taken into account, and the reasons for choosing the Plan as adopted in the light of other reasonable alternatives.
Monitoring the Plan	Monitoring environmental effects over the lifetime of the Plan

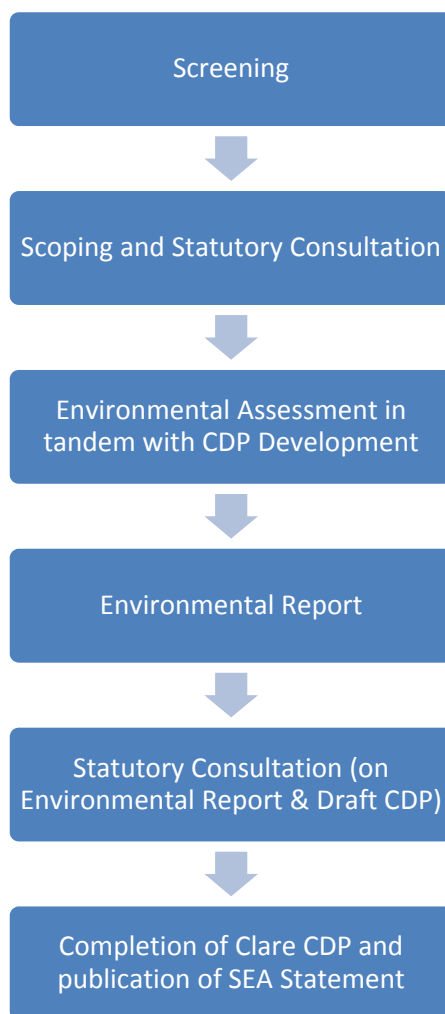


Figure 1.4 Overview of SEA Process

2.2.1 Screening

In accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004), as amended by S.I. No. 201 of 2011.

Article 13B of the Planning and Development (Strategic Environmental Assessment) Regulation 2004 (S.I. 436 of 2004), as amended by S.I. 201 of 2011, makes SEA mandatory for development plans where the population or the target population of the area of a development plan is 10,000 persons or more. Screening was therefore deemed unnecessary and the SEA proceeded to Scoping.

2.2.2 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 data collection. The scoping exercise for the Clare County Development Plan 2017-2023 was undertaken in February 2015 in response to observations received from environmental bodies. Scoping helps to focus the SEA on important issues such as those relating to existing and potential environmental issues and problems, therefore minimising 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 and quality of life; soil and geology; water; air and climatic factors; material assets; cultural heritage including architectural and archaeological heritage; and landscape.

In accordance with legislation, separate scoping notification was issued to the prescribed environmental authorities in February 2015, as well as to adjoining local authorities. Three submissions were received on the SEA and AA specifically as part of the consultation with the environmental authorities. A summary of the scoping submissions received, and how the issues are addressed in this SEA is provided in Table 2.2 below.

No	Submission	Environmental Issue	To be addressed in SEA
1	Cian O'Mahony SEA Section, EPA, Inniscarra, County Cork	<p>Two submissions were received from the EPA, the first related to the scoping issues paper and the second in relation to consultation on the Scoping Report.</p> <p><u>Issues raised in the response to consultation on the Scoping Issues Paper;</u></p> <p><i>Water Framework Directive</i> The Plan should protect and where possible, improve surface water, groundwater and coastal/estuarine resources and their associated habitats and species, including fisheries.</p> <p><i>Adequate and Appropriate Critical Infrastructure</i> The Plan should include commitments to provide adequate and appropriate critical service infrastructure to meet the demands of potential population growth and increased demands on existing services, in collaboration with Irish Water.</p> <p><i>Shellfish</i> The Plan should protect designated Shellfish Growing Areas present within/adjacent to the Plan area including Ballyvaughan/Poul-na-clough Bay; West Shannon, Rinevella; West Shannon, Carrigaholt; West Shannon, Poul-nasherry Bay and West Shannon, Ballylongford.</p> <p><i>Freshwater Pearl Mussels</i> The River Cloon Catchment, within the Plan area supports freshwater pearl mussel which are a designated species. The Plan should promote the favourable conservation for the freshwater pearl mussels.</p>	<p>Key issues identified in the submission will be described in Chapter 5 Environment baseline and assessed through policies, objectives and zonings as appropriate in the SEA ER.</p> <p>In addition the key elements listed in the EPA submission e.g. Freshwater Pearl Mussel will also be addressed in the relevant sections of the County Development Plan Written Statement and relevant objectives and policies established for their protection where necessary.</p>

	<p><i>Flood Risk Assessment and Management</i></p> <p>The Plan should promote the integration of the relevant recommendations of the Shannon CFRAM and the Western CFRAM studies. The need for flood risk assessment to be taken into consideration for both existing and proposed new zoning/rezoning which may occur within the Plan area should also be considered.</p> <p><i>Biodiversity</i></p> <p>The Plan should commit to protecting designated National, European and International sites (including candidate/proposed sites) such as the River Shannon and River Fergus SPA, the Lower River Shannon SAC and the East Burren Complex SAC. Protection of areas of undesignated ecological importance including riparian zones / ecological corridors, stands of trees should also be included as a specific commitment. The provision of appropriate buffer zones between designated / undesignated sites and areas zoned for development should be considered and land use zoning should be supported / informed by available habitat info and maps.</p> <p><i>Other Plans</i></p> <p>The Strategic Integrated Framework Plan for the Shannon Estuary 2013-2020 and associated SEA and AA should be taken into account when preparing the plan and undertaking SEA.</p> <p>In addition to comments on the Scoping Issues Paper, an SEA Information Pack was provided consisting of an SEA Guidance Document, Environmental Integration Checklist and an SEA Pack.</p> <p><u><i>Issues raised in the response to consultation on the SEA Scoping Report in addition to those raised in the response to the issues paper;</i></u></p> <p>Recent SEA Related Guidance</p> <p>The Agency has recently published guidance on</p>	<p>A full Strategic Flood Risk Assessment has been undertaken by JBA Consultants for the County Development Plan and the results integrated into the final zonings within each settlement ensuring only suitable or compatible uses are identified.</p> <p>Within Chapter 14 of the Written Statement protection objectives and policies have been incorporated to provide sufficient protection to these designated National, European and International Sites.</p> <p>The SIFP forms a separate volume of the County Development Plan (Volume 7) and has been fully incorporated into the assessment.</p> <p>The SEA Guidance document and integration checklist in particular will help inform the CDP; both documents will be used throughout the SEA process.</p> <p>Climate Change and</p>
--	---	--

		<p><i>'Integrating Climate Change into Strategic Environmental Assessment in Ireland'</i> which is also available to download.</p> <p>SEA WebGIS Search and Reporting Tool</p> <p>The Environmental Protection Agency (EPA) has launched a new application for the purposes of Strategic Environmental Assessment (SEA) for public authorities. This is a GIS based web application that will allow users to explore, interrogate and produce an indicative report on key aspects of the environment in specific geographic areas. These reports are indicative and will provide an overview of key aspects of the environment within a specific plan area. This may be used to inform the SEA screening and scoping stages for Plans and Programmes with particular reference in the first instance to the land use sector, though it is also applicable to other sector plans. It may be accessed via www.edenireland.ie</p>	<p>moving towards a low carbon county has been addressed in Chapter 18 of the Written Statement including the provision of objectives and policies.</p>
2	<p>Yvonne Nolan Development Applications Unit Department of Arts, Heritage and the Gaeltacht (not the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs)</p>	<p>Two submissions were received from the Development Applications Unit of the Department of Arts Heritage and the Gaeltacht in relation to the consultation on the SEA Scoping (06/03/2015, 20/03/2015 (which included a copy of the DAU submission to Variation No. 2 of the CDP)) in addition a further submission was received in response to the NIR Scoping Report on the 23/07/2015 which was taken into consideration in the NIR)</p> <p>Underwater Archaeological Heritage</p> <p>County Clare is rich in both terrestrial and underwater archaeological heritage and there should be clear reference made to, consideration of and allowance for these aspects of Clare's cultural heritage, particularly when the zoning of land, land use in general or specific programmes of works such as flood relief schemes are being considered.</p> <p>Any areas proposed or targeted for development should be subject to the proper appropriate assessment for cultural heritage, whether at SEA/EIS or Planning stage and this shall include a detailed desktop study looking at all the relevant sources both for terrestrial and underwater heritage and also incorporate field survey, intertidal/riverine/lake survey and underwater/diver survey where appropriate. A suitably qualified archaeologist(s) shall be engaged to carry out the surveys and it shall be noted that foreshore survey or any survey carried out for underwater archaeological purposes requires</p>	<p>Features of Cultural heritage played a key role in the assessment of zoning within each of the settlements as outlined in Appendix A of the SEA ER.</p> <p>Key protective policies and objectives were included within Chapter 15 of Volume 1 of the Written Statement.</p> <p>In addition in relation to foreshore issues and issues of importance within</p>

	<p>licensing by this Department.</p> <p>Any AA shall include detailed impact statements that look at all proposed developments with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. This would include any Strategic Development Locations, Infrastructural programmes of works, large scale developments, leisure projects, etc.</p> <p>Built Heritage</p> <p>Further to the meeting held with Clare County Council on 12th December 2014, it was agreed that consideration needed to be given to re-structuring the development plan chapter on built heritage. The Department would propose a further meeting with council officials to progress this matter.</p> <p>The Department's previous recommendations, as appended below and as issued in July 2014 for <i>Clare County Development Plan 2017-2023 to incorporate the Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary 2013-2020</i> shall be considered, where relevant and applied to any new proposed Clare Development Plan going forward.</p> <p><i>Please note the following contains a synopsis of the key points raised in the submission which are particularly relevant to the SEA, other points raised were addressed through the NIR and the Plan itself.</i></p> <p>Nature Conservation</p> <p>Relevant legislation and guidance should be followed in relation to these assessments. In this regard, Part XAB of the Planning and Development Act, 2000, as amended, sets out the terminology, stages and tests of the appropriate assessment process. It should be noted that, following screening, the assessment process is an 'appropriate assessment', and the report or statement of the likely significant effects (in the case of a plan) is an NIR2. The references to Stage I and Stage II assessments should be omitted in favour of the relevant terminology from this legislation.</p> <p>While existing guidance on appropriate assessment should be followed in general terms, there should be due regard to changes in the interpretation and application of directives and legislation arising from</p>	<p>the Shannon and Fergus Estuaries in terms of archaeology and cultural heritage additional protection and conservation measures were included within Chapters 11, 12 & 14.</p> <p>In response to this recommendation greater emphasis was placed on vernacular heritage and a restructuring of the information in relation to industrial heritage.</p> <p>The terminology used within the SEA, AA and all volumes of the CDP were amended to reflect Part XAB of the Planning and Development Act.</p> <p>This was noted and adhered to throughout the</p>
--	---	--

	<p>case law of the Court of Justice of the European Union (CJEU), and of the Irish courts, particularly in the case of Article 6 of the Habitats Directive.</p> <p>Plan content <i>Environment, heritage & public realm</i> As outlined below, the plan area contains and extends close to a large number of nature conservation sites, including legally protected European sites and NHAs, as well as a national park and wildfowl sanctuaries. Site protection derives primarily from planning legislation and the European Communities (Birds and Natural Habitats) Regulations, 2011, in the case of European sites, and from planning legislation and the Wildlife Acts, 1976-2000, in the case of NHAs.</p> <p>The plan area also supports other sites, habitats and species that form ecological corridors, networks and stepping stones. Of the species occurring in the plan area, some are strictly legally protected as Annex IV species under the European Communities (Birds and Natural Habitats) Regulations, 2011, while other species are protected under the Wildlife Acts, 1976-2000.</p> <p>The Department recommends that the natural heritage section of the plan should include clear and specific reference to European sites, NHAs, other statutory and non-statutory ecological sites, protected species, and ecological corridors and stepping stones in separate sections or sub-sections. Information should be presented to reflect the hierarchy of international to national and local significance of features. The legal obligations with respect to their conservation, protection and, in some cases, restoration, should also be reflected in the text of the plan. In addition, nature conservation sites should be given their formal site names and site codes, where applicable, and should be mapped in the plan.</p> <p>A clear distinction needs to be made in the plan between nature conservation sites, which are legally protected, and facilities and areas for recreation and amenity, whether active or passive, and including greenways, walkways, parks and other green areas. This distinction should also be clear in relation to green infrastructure, and in relation to areas for climate change adaptation or flood risk management. While such integrated uses may be compatible with the conservation of sites, and with the conservation objectives of European sites in particular, this may not always be the case. All such</p>	<p>development of the CDP.</p> <p>This was achieved through the inclusion of section 14.3.6 <i>Other Sites for Environmental and Ecological Protection</i> within volume 1 of the written statement together with objectives 14.4, 14.5, 14.6, 14.7 & 14.8. Nature conservation sites were given their former site names and were mapped in Volumes 2 & 10.</p> <p>This distinction has been clearly made through the zoning maps for each settlement contained in volume 3 together with the surrounding text and the text of the written</p>
--	---	--

	<p>proposals will require assessment at plan level. If uses or zonings of European sites are not clearly constrained by detailed and specific plan-level mitigation, it would be difficult to exclude the possibility that adverse effects could result. An example of this would be the indication of a cycleway or greenway route in or adjacent to a European site (whether in a map or in text); such a proposal could result in the loss, fragmentation or deterioration of natural habitats or the habitats of species within the site, or could lead to new or additional human use and associated disturbance which could cause displacement and a reduction in the area of habitat and resources available to a species, or a barrier to its movement.</p> <p><i>Nature conservation objectives</i></p> <p>Section 10(c) and 10(ca) of the Planning and Development Act, 2000 as amended, together with the Planning and Development Regulations, 2001-2012, stipulate that a plan must contain, among other things, objectives for the conservation and protection of the environment including, in particular:</p> <ol style="list-style-type: none"> 1. Natural heritage; 2. Conservation and protection of European sites and NHAs; 3. Encouragement of the management of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species. <i>Note that Article 10 of the Habitats Directive defines the features as those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as stepping stones (such as ponds or small woods) are essential for the migration, dispersal and genetic exchange of wild species.</i> <p><i>Scope of SEA</i></p> <p>The Biodiversity, Flora and Fauna section of the SEA should be undertaken by or in conjunction with a suitably qualified ecologist(s), and other specialists as necessary, and in conjunction with the NIR to ensure full integration of biodiversity issues and</p>	<p>statement.</p> <p>All zonings relating to walkways, cycleways or greenways have been assessed in detail and the zonings altered and removed in accordance with the findings of the SEA and AA.</p> <p><i>Please see Table 1 of the NIR for further details in relation to the incorporation of comments received from the DAHG.</i></p> <p>Specific nature conservation objectives have been included within Chapter 14 of the written statement through objectives 14.2 & 14.3</p> <p>This section of the SEA was undertaken in consultation with the ecologists Scott Cawley whom were</p>
--	---	---

	<p>concerns, particularly in relation to nature conservation sites, protected species, and ecological corridors and stepping stones – see above. The EPA's <i>Integrated Biodiversity Impact Assessment</i> best practice guidance is of particular relevance in this regard.</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. 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 (including NPWS-held datasets on habitats/habitat complexes and conservation objective supporting data, and the Council's habitat surveys and inventories within the plan area), and habitat indicator mapping (available from Teagasc/EPA); • Species of wild flora and fauna, including rare and protected species and their habitats (including data on rare and protected species from NPWS, the National Biodiversity Data Centre, BirdWatch Ireland, etc.); • All 'Margaritifera Sensitive Areas' – see above; • All watercourses, surface water bodies and associated wetlands, including floodplains 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>In general, no areas should be identified or targeted for development (e.g. through land use zoning, re-zoning or other strategies) 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 should be committed to development in the absence of basic information on ecological constraints.</p>	<p>responsible for undertaking the AA of the CDP.</p> <p>The EPA's <i>Integrated Biodiversity Impact Assessment</i> best practice guidance was also utilized together with other relevant guidance.</p> <p>Best available information and data held by Clare County Council and/or obtained through the data collection exercise was utilized to inform the SEA assessment of the land use zonings and based on the</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 the Habitats Directive, the Birds Directive, the Water Framework Directive and the Floods Directive, and with the Wildlife Acts, 1976-2000, the National Biodiversity Plan and the aims and objectives of the city's own Heritage Plan and Biodiversity Plan.</p> <p>Strategic environmental objectives should be included for all nature conservation sites (not just European sites), protected species, and ecological corridors and stepping stones as outlined above.</p>	<p>precautionary principle proposed recommended alterations and/or exclusions to zonings in order to avoid significant negative effects.</p> <p>Additional environmental protection objectives were included in Chapter 14</p>
--	--	--	--

Table 2.2 Key Environmental Issues raised in relation to the SEA and appropriate assessment at Scoping Stage

Pre-draft development plan submissions were sought in accordance with the Planning and Development Act 2000, as amended. 51 submissions were received on a range of issues in relation to the review of the Clare County Development Plan 2017-2023. The following table summarises these submissions and highlights issues of environmental relevance. Further information on these submissions may be found in the Chief Executives Report prepared by Clare County Council and issued to the elected members for their consideration on the 30th April 2015.

Submissions to Pre Draft Clare County Development Plan 2017-2023 Issues Booklet 9/1/2015 to 9/3/2015

Sub No.	Person or Organisation making Submission	Environmental Issue	To be addressed in SEA
1	NRA	Managing exchequer investment and statutory guidance, development & core strategy, development at national road junctions, national road schemes, road safety, traffic and transport assessment, service areas, signage, noise	Material Assets includes transport and will be described in Chapter 5 Baseline; transport policies and objectives will be assessed through the SEA and AA processes.
2	Dept of Arts, Heritage & the Gaeltacht (DAU)	Built Heritage, Archaeological Heritage, Nature Conservation, Environmental Assessments required, Plan Content, Implications for nature conservation, data/information sources, key ecological/natural heritage features, NIR and appropriate assessment	Please see detailed response in Table 2.2
3	Department of Communications, Energy and Natural Resources on behalf of Geological Survey of Ireland	Geological Heritage, County Geological Sites in Clare, Promotion of Geological Heritage, Policies and Guidelines, The Burren and Cliffs of Moher Geopark, Glossary, Datasets	Please see detailed response in Table 2.2 The Geology and Soil section of Chapter 5 Baseline will provide information on this sector in the county. Policies and Objectives relating to same will be assessed through the SEA and AA processes.
4	Eugene Garrihy	Zoning of land at Russel Cultural Centre and Doolin Community Centre	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
5	Martina O'Dea	Energy, Infrastructure & Communications, Fracking	Noted. Policies and objectives relating to Energy, Infrastructure, Communications and Fracking will be assessed through the SEA and AA processes.
6	Doolin Tourism	Meeting request to advise on submission they wish to submit re. traffic management plans, parking, roads, footpaths, walls, lighting, heritage, proposed public buildings	Noted. Policies and objectives relating to traffic management plans, parking, roads, footpaths, walls, lighting, heritage, proposed public buildings will be assessed through the SEA and AA processes.

7	Sean McNamara & Tim Ryan	Zoning of land	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
8	Michael O'Gorman	Vision, Energy, Infrastructure & Communications, Moneypoint, Rural Development, Housing & Population, Economy & Employment, Shannon Airport, Limerick University, Environment, Heritage & Public Realm	All policies and objectives relating to these various sectors will be assessed through the SEA and AA processes.
9	Dept of Education and Skills	Information to calculate educational infrastructural requirements	Noted
10	Kathleen Griffey	Zoning of land at Drumquin, Barefield	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
11	Cunnane Stratton Reynolds on behalf of Zinc Properties	Attract inward investment to the Burlington Business & Recreation Park in Clonlara & zoning	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
12	Martin Carey	Taking housing estates in charge, wastewater treatment infrastructure, sewerage schemes	Material Assets includes water and waste water treatment infrastructure and will be described in Chapter 5 Baseline; policies and objectives relating to this form of infrastructure will also be assessed through the SEA and AA processes. In addition where such infrastructural requirements are insufficient to allow significant future development or expansion in relation to the zoning of lands this will be identified for each settlement in Vol. 3 of the CDP and documented through Annex B of this SEA ER.
13	Cllr. James Breen	Remove restriction whereby people living in towns and villages be allowed to build houses in the country	Noted
14	Cunnane Stratton Reynolds	Killaloe and Lough Derg, Wild Atlantic Way, Comparable Development Plan Policies	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
15	Ennis Chamber	Support Ennis as a hub town and county town, water services, broadband, electricity, management of business parks,	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B. All policies and

		car parking, signage, traffic management, basic infrastructure	objectives in relation to material assets and infrastructure will also be accessed through the SEA and AA processes.
16	Eirgrid	Relevant transmission projects in County Clare and suggested text/policy wording for the Draft Clare County Development Plan 2017-2023	Noted. Energy policies, objectives and potentially zonings will be developed for the CDP and will be assessed through the SEA and AA process. Energy usage and renewable energy is also described in Climatic Factors and Material Assets within Chapter 5 Baseline Environment of the SEA ER. It will also outline the relevant transmission lines.
17	Cunnane Stratton Reynolds on behalf of Doonbeg Golf Resort	Economic & Employment, Tourism, Energy, Infrastructure & Communities, Development Control Standards	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
18	Cunnane Stratton Reynolds on behalf of Shannon Commercial Properties	Development potential portfolio of SCP, re-development of Shannon Free Zone, car parking standards, promotion of Information Age Park Ennis, tourism energy between Shannon Airport and Bunratty, key strategy sites owned by SCP, strengthening the Shannon - Limerick Gateway, Tourism	Noted. Shannon Airport is addressed in detail within Chapter 6 and Chapter 11, Bunratty is a key settlement which is looked at in detail in Vol. 3, the Shannon/Limerick Gateway and tourism are also addressed within the written statement. All policies/objectives and relevant zonings related to these sectors will be assessed through the SEA and AA processes.
19	Joe & Annette Connolly	Zoning of land at Knockyclovaun, Hill Road, Killaloe	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
20	Construction Industry Federation	Zoning of land for housing, SIIFP, port related activities, energy supply, hotel and other tourist and leisure related activities, Northern Ring Road to the north of Limerick City, UL, wind and wave power	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B. The SIIFP is included as a separate volume to the CDP (Vol. 7) and forms a key component which will be assessed through the cumulative and in-combination effects of the SEA.
21	Meelick GAA	Health and Safety and Traffic issues to Meelick GAA grounds	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.

22	South Regional Assembly	Housing and Population, Economy and Employment, Retail, Infrastructure, Communications and Energy, Quality of Life and Community, Environment, Heritage and Public Realm	All policies and objectives relating to specific sectors will be assessed through the SEA and AA processes.
23	Clare Comhairle na nÓg	Housing & Population, Economy & Employment, Shannon & Shannon Airport, Energy, Infrastructure & Communications, Quality of Life & Community, Tourism, Town & Villages, Environment, Heritage & Public Realm	All policies and objectives relating to specific sectors will be assessed through the SEA and AA processes.
24	HSE Health & Wellbeing Services in the Clare and Mid-West Areas	Health & Wellbeing	Noted. CDP 5.11 Physical Recreation and Active Living promotes Active Living as a means of enhancing health, wellbeing and social inclusion;
25	An Taisce	Irish Water, The Aarhus Convention, the recession and impacts of climate change	Irish Water has been extensively consulted with in relation to the development of the CDP and associated SEA ER. Details in relation to the Through the undertaking of public consultation and the provision of all data relevant to the CDP being made available on the Clare CoCo website the CDP process is in line with the pillars of the Aarhus Convention. Climate change has been addressed in Chapter 18 of the Vol. 1 of the CDP and the corresponding policies and objectives assessed through the SEA and AA process.
26	Wind Aware Clare	Implementation of planning rules, zoning for wind energy, connections from wind energy development to national grid	Noted. All policies and objectives relating to wind energy as identified through Vol. 5 (Wind Energy Strategy) and incorporated into Chapter 8 of Vol. 1 will be assessed through the SEA and AA processes.
27	Crusheen Tidy Town Committee	Zoning, retail strategies, support tidy towns committees, gateway access off the M18 to Dromore Wood, the Burren & Aughty regions, lakes, biodiversity & heritage trails, provide access roads, ESB and telecom poles, walking and cycling loops, stand alone outdoor notice boards	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.

28	Kilkee Tourism Ltd	Housing, Economic Development, Tourism, Traffic Management	All policies and objectives relating to specific sectors will be assessed through the SEA and AA processes.
29	Brookfield Renewable Energy Group	Renewable Energy,	Noted. All policies and objectives relating to renewable energy as identified through Vol. 6 (Renewable Energy Strategy) and incorporated into Vol. 1 will be assessed through the SEA and AA processes.
30	Padraig Howard	Housing Provision, Kilmaley Village, Barefield Village	Noted. All policies and objectives relating to specific settlements and associated zonings will be assessed through the SEA and AA processes.
31	West Clare Renewable Energy Ltd & Atlantic Force Renewable Ltd	Renewable Energy,	Noted. All policies and objectives relating to renewable energy as identified through Vol. 6 (Renewable Energy Strategy) and incorporated into Vol. 1 will be assessed through the SEA and AA processes.
32	Theresa Carter	Energy	Noted. All policies and objectives relating to energy as identified in Chapter 8 of Vol. 1 will be assessed through the SEA and AA processes.
33	Irish Wind Energy Association	EU commitments and DCENR's RES-E target, benefits of wind energy development to Clare Co Co, promotion of renewable energy	Noted. All policies and objectives relating to wind energy as identified through Vol. 5 (Wind Energy Strategy) and incorporated into Chapter 8 of Vol. 1 will be assessed through the SEA and AA processes.
34	ESB	Generation, Transmission and Distribution, ESB Telecoms & Telecommunications Infrastructure, Electricity Generation, EU policy, sustainable power generation, government electric transport system, transport related planning policy	All policies and objectives relating to specific sectors such as infrastructure will be assessed through the SEA and AA processes.
35	HRA Planning on behalf of Shannon Foynes Port Company	Implementation of SIFP	The SIFP was previously adopted as Variation No. 2 to the CDP. It now forms Vol. 7 of the 2017-2023 CDP and therefore all policies and objectives will be assessed through the SEA and AA processes primarily through the in-combination and cumulative

			effects.
36	McGill Planning Ltd on behalf of Applegreen Service Areas Ltd	Advocate a strategic forward planning approach to the identification of suitable locations for off-line MSAs	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
37	John and Helen Browne, Doolin Cave	Sewage scheme for Doolin, footpaths and public lighting between Fisherstreet and Roadford villages, coastal path from Doolin to Ballyreen with spurs to existing roads off the R479 between Doolin and Ballinlacken, continue the existing Cliffs of Moher walk to Doolin	Noted. Irish Water has been consulted with in relation to water and waste water infrastructure requirements in County Clare as a whole. Material Assets includes water and waste water treatment infrastructure and will be described in Chapter 5 Baseline; policies and objectives relating to this form of infrastructure will also be assessed through the SEA and AA processes. In addition where such infrastructural requirements are insufficient to allow significant future development or expansion in relation to the zoning of lands this will be identified for each settlement in Vol. 3 of the CDP and documented through Annex B of this SEA ER.
38	Lisdoonvarna Fáilte Limited	Development of the Lisdoonvarna Spa Wells facility as a significant visitor interpretation site on the Wild Atlantic Way and reinventing Lisdoonvarna as a true Victorian town	Noted. All policies and objectives relating to specific settlements and associated zonings will be assessed through the SEA and AA processes.
39	Younger Voices, Clare Youth Service	Ensure voice of young people is included in the Plan, walking/cycling lane along the Old West Clare Railway Line, entrepreneurship and innovation	Noted. Policies and objectives in relation to recreational routes/walkways etc will be assessed in detail within the SEA ER.
40	Bridget O'Brien	Zoning of land at Ballyduff, Barefield	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
41	John Cleary	Settlement Boundary of Ballycannon North.	Noted. Zonings will be assessed through the SEA and AA process with a detailed analysis provided in Annex B.
42	Ogonnelloe Community	Energy, Waste, Transport, Food, Biodiversity	All policies and objectives relating to specific sectors will be assessed through the SEA and AA processes.

43	University of Limerick	Development and expansion of University	Noted. All policies and objectives relating to specific settlements and associated zonings will be assessed through the SEA and AA processes.
44	GVA on behalf of The Educena Foundation	Former institutional lands and educational facilities in Co Clare	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
45	Doolin Tourism	Sewage problems, infrastructure, traffic management plans, parking, road realignment, footpaths, public lighting, extension to the Cliffs of Moher walk.	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
46	Rethink Tourism on behalf of Fáilte Ireland	Current market performance, strategic aims of Fáilte Ireland & opportunities for Co Clare, tourism policy in the plan	Noted. All policies and objectives relating to tourism and associated zonings will be assessed through the SEA and AA processes.
47	Irish Water	Water	Significant consultation was undertaken with Irish Water in relation to the capacity of water and waste water treatment infrastructure in Clare and incorporated into the SEA assessment.
48	Michael Duffy	Water Framework Directive, discharge from Kilfenora, to pursue Irish Water regarding the construction of a single wastewater treatment plant to serve Kilfenora	Significant consultation was undertaken with Irish Water in relation to the capacity of water and waste water treatment infrastructure in Clare and incorporated into the SEA assessment. Material Assets includes water and waste water treatment infrastructure and will be described in Chapter 5 Baseline; policies and objectives relating to this form of infrastructure will also be assessed through the SEA and AA processes. In addition where such infrastructural requirements are insufficient to allow significant future development or expansion in relation to the zoning of lands this will be identified for each settlement in Vol. 3 of the CDP and documented through Annex B of this SEA ER.
49	Jackie Whelan	Tourism in West Clare, Wind Energy, Shannon Estuary,	Noted. All policies and objectives relating to renewable energy as

		Renewable Energy	identified through Vol. 6 (Renewable Energy Strategy), wind energy as identified through Vol. 5 (Wind Energy Strategy) and incorporated into Vol. 1 will be assessed through the SEA and AA processes.
50	Patrick Blake	Tourism, Wastewater disposal and treatment	Material Assets includes water and waste water treatment infrastructure and will be described in Chapter 5 Baseline; policies and objectives relating to this form of infrastructure will also be assessed through the SEA and AA processes. In addition where such infrastructural requirements are insufficient to allow significant future development or expansion in relation to the zoning of lands this will be identified for each settlement in Vol. 3 of the CDP and documented through Annex B of this SEA ER.
51	Cllr Johnny Flynn	CEDRA, towns & villages, rural communities, social enterprise sector, road networks, creative industries, food production, rural housing associations, hub of outdoor sports & recreational activity, West Clare Greenway, rural transport, historic buildings, broadband, cultural & music	Noted. All policies and objectives relating to specific sites and associated zonings will be assessed through the SEA and AA processes.
	<u>Late Submissions</u>		
1	Peter Murphy & Associates on behalf of Alex Russell, Architect	Closing date for submissions was 9/3/15 & Submission was received 30/5/15. Returned original submission & advised Mr Murphy by letter 10/6/15 that there would be a further opportunity to make a submission at Draft Stage. (copy on file)	N/A
2	Connellan & Associates, Cahercalla Woods, Cahercalla,	Submission received 23/6/15. Connellan & Assoc were advised by letter 16/7/15 that there would be a further opportunity to make a submission at draft stage & original submission was returned. (copy on file)	N/A

3	Gerard Malone, Crossbeg, Cross, Kilkrush	Submission received 20/8/15. . Mr Malone was advised by letter 21/8/15 that there would be a further opportunity to make a submission at draft stage & original submission was returned. (copy on file)	N/A
----------	--	---	-----

Table 2.3 Submissions received at Pre-Draft Stage of the review of the County Development Plan

2.2.3 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 2.2.

Table 2.4 Structure of Environmental Report in compliance with Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004, as amended.

Schedule 2B Information Requirement	Environmental Report
(a) An outline of the contents and main objectives of the plan and relationship with other relevant plans	Chapter One – Introduction Chapter Two - SEA Methodology Chapter Three – Clare County Development Plan 2017-2023 Chapter Four – Relationship with other relevant plans.
(b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Chapter Five – Environmental Baseline
(c) The environmental characteristics of areas likely to be significantly affected	Chapter Five – Environmental Baseline
(d) Any existing environmental problems which are relevant to the plan including, in particular, those in relation to any areas of particular environmental importance, such as areas designated pursuant to the Birds Directive of Habitats Directive.	Chapter Five – Environmental Baseline
(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.	Chapter Six – Strategic Environmental Objectives
(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 heritage including architectural and archaeological heritage,	Chapter Eight – Assessment of Effects of Implementing the Clare County Development Plan 2017-2023

landscape and (g) the inter-relationship between the above factors.	Chapter Five – Environmental Baseline and in each section as 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.	Chapter Nine - Mitigation
(i) An outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Chapter Seven – Development and consideration of Alternatives
(j) A description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan	Chapter Ten - Monitoring
(k) A non-technical summary of the information provided under the above headings	This is provided as a separate document to the Environmental Report.

The Environmental Report incorporates the following key elements:

Baseline Data - The baseline data assists in assessing the current state of the environment, facilitating the identification, evaluation and subsequent monitoring of the effects of the Plan. Thus, this information creates a platform whereby existing problems relevant to the Plan area can be quantified (where possible) or qualified thereby ensuring that the implementation of the Plan does not exacerbate these problems.

Baseline data has been collected based on the various broad environmental topics described in the SEA Directive and Regulations (as amended), i.e. population, biodiversity, fauna, flora, soil and geology, water, air, climate factors, material assets, cultural heritage including architectural and archaeological heritage and landscape and the interrelationship between these factors. The Directive and Regulations (as amended) requires that information be focused upon relevant aspects of the environmental characteristics of the area likely to be significantly affected by the Plan and the likely change, both in positive and negative terms, where applicable. The baseline data was collated from currently available, relevant data sources and includes information suggested in submissions on the SEA scoping process.

Environmental Assessment of the County Development Plan - The principal component of the SEA involves a broad environmental assessment of the objectives (including zoning objectives) of the Development Plan. A methodology that utilises the concept of expert judgement, public consultation, GIS and matrices, both to assess the environmental impact and to present the conclusions has been adopted in this SEA. Key to assessing the objectives of the Clare County Development Plan 2017-2023 is setting a specific set of environmental objectives for each of the environmental parameters listed in the SEA Directive and Regulations (as amended). These Strategic Environmental Objectives (SEOs) are outlined in Chapter 6. The policies/objectives and zonings of the Clare County

Development Plan 2017-2023 are then assessed against the SEOs in Chapter 8 and a discussion is provided, where relevant, on the significance and type of the identified impact in accordance with current guidelines.

Consultation - Planning Authority Team - A multi-disciplinary team was established in order to prepare the Clare County Development Plan 2017-2023, Strategic Environmental Assessment, Strategic Flood Risk Assessment and Natura Impact Report and to examine the significant environmental impacts which may result from the implementation of the Plan. Consultation took place with a number of internal departments within Clare County Council including Environment, Community and Enterprise, Roads, and Water Services (in so far as the current remit extends) together with extension consultation with Irish Water throughout the preparation of the Clare County Development Plan 2017-2023. This enhanced the identification of environmental issues.

Integration of the County Development Plan, Strategic Environmental Assessment and Appropriate Assessment Processes - The SEA legislation and guidelines highlight the importance of the integration between the preparation of the Development Plan and the SEA and AA processes. Table 2.3 shows how the processes have been integrated throughout. The iterative nature of the SEA process is such that the County Development Plan is informed by environmental considerations throughout the preparation of the Plan and the development of the Plan objectives and land-use zonings. The Natura Impact Report is a separate document to the Environmental Report both of which accompany the County Development Plan.

Table 2.5 The integrated processes of preparation and consultation for the Clare County Development Plan 2017-2023, Strategic Environmental Assessment and Appropriate Assessment

Clare County Development Plan 2017-2023	Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA)
Commence preparation of Draft Plan Pre-Draft Consultation Period 1st October 2015 – 25th November 2015	Commence review and preparation of SEA Scoping Process Pre-Draft Consultation Period 1st October 2015 – 25th November 2015
Commencement of public display and invitation of submissions on Draft Plan, Environmental Report and Natura Impact Report 8th December 2015 Closing date for public submissions on Draft Plan 29th February 2016	
Chief Executives Report on Submissions received to Draft Plan, Environmental Report and Natura Impact Report (for Elected Members) 19th May 2016	
Consideration of Chief Executive's Report by Elected Members (resolve to alter or make, amend or revoke Draft Plan, Environmental Report and Natura Impact Report) 25th July 2016	
	Determination of Requirement for SEA/AA in accordance with S.12 of the Planning & Development Act (within 2 weeks of resolution) ¹
Public Display of Amendments to Draft Plan and consultation period 13th September 2016 – 12th October 2016 (inclusive)	Public Display of Amendments to Environmental Reports and consultation period 13th September 2016 – 12th October 2016 (inclusive)
Submission of Chief Executive's Report to Members on submissions on the proposed material alterations to the Draft Plan, Environmental Report Addendum and Natura Impact Report 8th November 2016	
Consideration of Chief Executives Report by Elected Members (resolve to make, amend or revoke Draft Plan, Environmental Report and Natura Impact Report) 19th December 2016	
The Council received a notice of intent in accordance with S.31 of the Planning & Development Act, 2000 (as amended) from Minister for Housing, Planning, Community and Local Government, to issue a direction in relation to a specific element of the Clare County Development Plan 2017-2023 23rd January 2017	
Clare County Development Plan 2017-2023 comes into effect 4 weeks after adoption, accompanied by the Environmental Report and SEA Statement and the Natura Impact Report 25th January 2017	
Notice of Draft Ministerial Direction on the making of the Clare County Development Plan 2017-2023. Public Display of Draft Ministerial Direction. 31st January – 13th February 2017 (inclusive)	
Chief Executive's Report on submissions and observations received on notice of intent to issue a Ministerial Direction in relation to the making of the Clare County Development Plan 2017-2023 submitted to the Minister for Housing, Planning, Community and Local Government and to the elected Members of Clare County Council	

10th March 2017
Minister for Housing, Planning, Community and Local Government, decision to issue Direction relating to the Clare County Development Plan 2017-2023
28th March 2017
Notice of Ministers decision to issue a Direction issued to Elected Members and the Public
29th March 2017
Note ¹ – The Planning & Development Act 2010 allows for the Chief Executive to allocate an additional discretionary time period to allow for the carrying out of SEA/AA in respect of any proposed material alterations to the Draft Plan.

Consideration of Alternatives - Article 5 of the SEA Directive specifies that the Environmental Report should consider ‘reasonable alternatives taking into account the objectives and geographical scope of the plan or programme’.

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 (such as technical deficiencies or lack of know-how) 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 the earliest stage in the process of plan-making. It is likely 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 area within the constraints imposed by environmental conditions. The Plan is based on the principles of sustainable development and in applying these principles Chapter 7 presents the process of identifying and assessing the alternatives considered in the plan making process which culminated in identifying the preferred development scenarios for the Plan.

Mitigation - This stage provides information on the mitigation measures necessary to minimise/eliminate any significant adverse impacts due to the implementation of the Plan. Section (g) of Schedule 2B of the SEA Regulations (as amended) require information on the mitigation measures that will be put in place to minimise or eliminate any significant adverse impacts due to the implementation of the Clare County Development Plan 2017-2023. Mitigation measures and methods of offsetting potential impacts have been proposed during the course of the preparation and review of the Plan. This has resulted in objectives and policies which are more robust and environmentally sustainable. Chapter 9 details the mitigation measures necessary to prevent, reduce, and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

Monitoring - Under Article 10 of the SEA Directive and Section (i) of Schedule 2B of the SEA Regulations (as amended), monitoring is required in order to identify at an early stage any unforeseen adverse effects caused by the implementation of the Plan. Monitoring provides for any issues to be identified and where these are of concern, then for consideration of mitigation measures to be identified. Monitoring also allows for additional baseline information to be gathered which will inform progress of the Plan and its future review. Chapter 10 of this report sets out the monitoring measures for the Clare County Development Plan 2017-2023. The schedule of

monitoring identifies a series of targets and indicators in relation to each Strategic Environmental Objective, which will allow for detection and evaluation of any environmental change, both positive and negative, as a consequence of the implementation of the Plan. Where negative environmental effects are detected it may be necessary to consider additional mitigation measures to off-set these effects.

2.2.4 SEA Statement - Information on Decision

Following the adoption of the Plan the competent authority is required to make available the adopted County Development Plan and a statement setting out relevant “Information on the Decision” as set out in Article 9 of the SEA Directive and by Article 13 of the Planning and Development Regulations 2001 (as amended) as amended by Article 7 of the SEA Regulations in relation to Development Plans.

Section 13I of the SEA Regulations 2004 (as amended) and the SEA Directive require that the Environmental Report accounts for the opinions expressed by the public, statutory consultees, any other stakeholders and the outcome of any trans-boundary consultation. In turn this must be taken into account during the preparation of the Plan and prior to its final adoption. This detail is presented in the ‘Information on Decision’ also known as the SEA Statement. The SEA Statement will illustrate how decisions were taken, making the process more transparent.

2.2.5 Geographical Information Systems

The use, and application, of GIS will be considered where possible at the various key stages in the SEA process. GIS will, along with other methodologies, and depending on the availability of relevant spatial data, assist in determining the cumulative vulnerability of various environmental resources within the plan area. GIS will also demonstrate visually how the Plan might impact on the plan area resources. In undertaking the SEA, all the environmental data and information presented on the GIS based maps will be taken into account.

Clare County Council’s GIS system is utilised to collate the data into an operational database allowing the development of individual and/or combined environmental parameter maps and variations of these maps for the Plan area at various stages and scales. This baseline information and existing environmental data together with the SEOs, which are outlined in Chapter 5 and 6, has helped to identify, describe and evaluate the likely significant environmental effects of implementing the Clare County Development Plan 2017-2023 and determine appropriate mitigation and monitoring measures.

2.3 Data Information Gaps

During the SEA review process no new research was undertaken and information was gathered from existing sources of data. It should be noted that there are a number of areas where data were not readily available and/or in an appropriate format. These issues are discussed under the relevant sections in Chapter 5 and where possible recommendations are made.

2.4 SEA Recommendation*

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations	Inclusion in the Plan
Include within the Plan an inventory of SEA recommendations and how they have been incorporated into the Plan	No. This is done within the SEA ER
Refer to Clare County Council's responsibilities and obligations in accordance with all national and EU environmental legislation. It is a matter for Clare County Council, to ensure that, when undertaking and fulfilling their statutory responsibilities, they are at all times compliant with the requirements of national and EU environmental legislation.	Yes.
Make available a copy of the SEA Statement for public inspection at the Local Authority offices, local authority website and also notify any Environmental Authorities consulted during the SEA process.	This will be done following adoption of the Development Plan.

Chapter Three – Clare County Development Plan 2017-2023

3.1 Introduction

The Clare County Development Plan 2017-2023 sets out an overall strategy for the proper planning and sustainable development of the functional area of Clare County Council over a 6 year period. Development Plans comprise a written statement supported by maps indicating the development objectives for the area in question, including a number of mandatory objectives. Clare County Council is required to prepare and adopt a County Development Plan every 6 years. Not later than 4 years after the adoption of the Development Plan, the Council is required to review its existing Development Plan and commence the preparation of a new one.

The Clare County Development Plan 2017-2023 governs the functional area of Clare County Council. It replaces the Clare County Development Plan 2011-2017 (as amended) and it is the seventh Clare County Development Plan since 1964. As a result of the implementation of the Local Government Reform Act 2014, this development plan incorporates the areas formerly within the jurisdiction of Ennis Town Council and Kilrush Town Council, both of which previously had their own development plans.

3.2 Format and Content of the Clare County Development Plan 2017-2023

The Clare County Development Plan 2017-2023 takes into account national and regional planning guidelines, strategies and policy documents. It is also informed by particular national and global environmental issues that are accepted as being critical to the formulation and implementation of sustainable development. They include climate change, flooding, renewable and alternative energy. In addition, the County Development Plan 2017-2023 has been prepared in compliance with the requirements of the Strategic Environmental Assessment Directive (2001/42/EC) and the EU Habitats Directive (92/43/EEC).

The Clare County Development Plan 2017-2023 has regard to other relevant local policy documents in County Clare. The objectives contained in the County Development Plan complement the goals and aims of the Clare County Council Local Economic & Community Plan 2015-2021, Clare County Council Corporate Plan, the Limerick and Clare Sports and Physical Recreation Strategy and the Clare Traveller Accommodation Strategy. Moreover, the development plan commits to equality, accessibility and gender proofing throughout the preparation of the plan, policy formation and its implementation.

The format of the Clare County Development Plan 2017-2023 reflects the challenges and opportunities facing the county over the period of the plan as well as the specific and unique issues pertaining to land-use and the socio-economic development of the county.

The Clare County Development Plan 2017-2023 is the primary policy document for planning policy throughout the functional area of Clare County Council. The plan also contains settlement plans for all of towns and villages in the county, with the exception of Shannon town. Shannon, as the

designated Gateway, has its own dedicated local area plan. This provides the user with a simplified and user-friendly approach to land-use and planning in the county.

The plan has been written and presented in a user-friendly manner. To assist this, a definition of the technical terms used is provided in the glossary of terms.

The Clare County Development Plan 2017-2023 consists of 10 volumes, as follows:

Volume 1 - Written Statement

This contains the written text and constitutes the main body of the document outlining the vision, Core Strategy and objectives for the different policy areas addressed by the development plan. The development plan contains the mandatory objectives as required by the Planning and Development Act 2000 (as amended), as specified in Section 1.1.1 above.

Volume 2 - Maps

This volume contains all the large scale maps referred to in Volume 1 and which give effect to the designations as contained in the written statement.

Volume 3 – Municipal District Settlement Plans

This volume contains individual settlement plans and land use zoning details for each of the towns and villages in the municipal districts of the County as follows:

Volume 3(a) – Ennis Municipal District Settlement Plans

Volume 3(b) – Shannon Municipal District Settlement Plans

Volume 3(c) – Killaloe Municipal District Settlement Plans

Volume 3(d) – West Clare Municipal District Settlement Plans

Volume 4 - Record of Protected Structures

A Protected Structure is a structure that is considered to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social and technical point of view. There are over 600 Protected Structures in the Clare County Development Plan 2017-2023 and details of all Protected Structures are entered in this Record of Protected Structures.

Volume 5 – Clare County Wind Energy Strategy

This volume comprises a detailed county-wide Wind Energy Strategy, supplemented by maps which set out Clare County Council's strategy for informing wind energy development, having regard to economic, environmental and visual issues.

Volume 6 – Clare Renewable Energy Strategy 2017-2023

This volume outlines the renewable energy resource that is deliverable within County Clare including issues such as micro-renewable energy and energy storage.

Volume 7 – Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary

This volume comprises the SIFP, an inter-jurisdictional land and marine-based framework to guide the future development and management of the Shannon Estuary.

Volume 8 – Retail Strategy for the Mid-West

This volume comprises the Retail Strategy for the Mid-West region, which is intended to provide a strategic region-wide approach to achieving a balance in retail development.

Volume 9 – Joint Housing Strategy for Clare Local Authorities and Limerick City & County Councils 2010-2017

This Volume comprises a joint Housing Strategy, prepared in accordance with Part V of the Planning and Development Act 2000 (as amended) and covering the functional areas of Limerick County Council, Limerick City Council and Clare County Council.

Volume 10 Environmental Appraisal of the Plan

This Volume of the Plan comprises a suite of environmental assessments, in full compliance with the requirement of the Habitats Directive, the Strategic Environmental Assessment Directive and the Flood Directive as follows:

Volume 10a	Habitats Directive Assessment – Natura Impact Report
Volume 10b(i)	Strategic Environmental Assessment – Environmental Report
Volume 10b(ii)	Strategic Environmental Assessment – Environmental Report– Non Technical Summary
Volume 10c	Strategic Flood Risk Assessment

3.2.1 Vision for County Clare

A county that has maximised its unique characteristics, strengths, location and connectivity to become Ireland’s centre of culture, tourism, heritage and the preferred international destination for sustainable investment and innovation. A county in which citizens, visitors and all stakeholders are empowered and supported by public bodies under the leadership of a professional, responsive and progressive local government system.

3.2.2 Goals

The chapters of the Clare County Development Plan 2017-2023 set out the planning policy response of Clare County Council to achieve the vision set out above by 2023. Each chapter identifies a key goal supported by strategic aims and objectives. It is through the delivery of these goals that this common vision for County Clare will be achieved. The key goals are:

- I. A County Clare that drives local and regional sustainable growth by harnessing the potential of its unique location, quality of life, natural resources and other competitive advantages.*
- II. A County Clare with strong and balanced urban and rural areas providing key services and a good quality of life and where people have the choice to live in the area where they are from.*

- III. *A County Clare with high quality housing at appropriate locations throughout the county, ensuring the development of a range of house types, sizes and tenures to accommodate differing household needs, promote sustainable communities, social integration and inclusion and facilitating a sense of place.*
- IV. *A County Clare where healthy and sustainable communities are developed and integrated with the timely delivery of a wide range of community, educational and cultural facilities and where, through a commitment to equality, participation, accessibility and social inclusion, the county develops as a unique location with an enhanced quality of life for its citizens and visitors.*
- V. *A County Clare in which jobs and people are brought together and where the growth of employment, indigenous enterprise and economic activity is pursued proactively across all economic sectors throughout the county.*
- VI. *A County Clare with viable and vibrant town and village centres, that have shopping areas and markets at appropriate scales and locations and which function to serve their communities and rural hinterlands.*
- VII. *A County Clare which supports strong economic growth and a high quality of life for all residents through the provision of efficient and robust physical infrastructure whilst having regard to environmental responsibilities and complying with European and National legislation.*
- VIII. *A County Clare in which tourism growth continues to play a major role in the future development of the county, adapting to the challenges of competing markets by maximising the development of a high quality diverse tourist product.*
- IX. *A County Clare with diverse and strong rural communities and economy, where its natural resources are harnessed in a manner that is compatible with the sensitivity of rural areas and the existing quality of life.*
- X. *A County Clare that builds on the strategic location and natural resources of the Shannon Estuary by facilitating and maximising its potential for various forms of development while managing the estuarine and natural environment in full compliance with all relevant EU Directives.*
- XI. *A County Clare which maximises and manages the economic, social and recreational potential of the Atlantic Coastline and Shannon Estuary while protecting the coastal zone and its resources and adapting to and managing the challenges of climate change including flooding and sea-level rise*
- XII. *A County Clare of 'living landscapes' where people live, work, recreate and visit while respecting, managing and taking pride in the unique landscape of the county*
- XIII. *A County Clare which protects and enhances the county's unique natural heritage and biodiversity and recognises the potential for sustainable green infrastructure development, while promoting and developing its cultural, educational and eco-tourism potential in a sustainable manner.*
- XIV. *A County Clare that affords protection and conservation to buildings, areas, structures, sites and features of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and recognises them as a social, cultural and economic asset to the County.*
- XV. *A County Clare with a strong and vibrant network and towns and villages that provide a wide range of services and a high quality of life for residents of the county.*
- XVI. *A County Clare that promotes and develops all buildings, urban spaces and public realms of the highest quality and ensures all development adheres to the principles of good design and contributes to the establishment of distinctive buildings and areas with a 'sense of place'*

- XVII. *A County Clare that is resilient to climate change, manages flood risk, facilitates a low carbon future, supports energy efficiency and conservation and enables the decarbonisation of our lifestyles and economy.*
- XVIII. *A County Clare where the overall strategic objectives of the County Development Plan are translated into settlement plans and local area plans containing detailed land-use zonings and master-planning of neighbourhoods in an evidenced-based, plan-led approach with a focus on ensuring a high quality of life.*

3.2.3. The Role of Local Government and the County Development Plan 2017 – 2023

The Local Government Act 2001 (as amended) sets out the functions of Local Authorities. It recognises that one of the roles of a local authority is to provide a forum for the democratic representation of its citizens and to provide civic leadership for that community.

Given the extensive public consultation afforded to the making of a development plan and that its adoption is the function of the Elected Members, it has been described as a ‘contract’ between the Council and the public. This Plan is therefore an agreed blueprint for the economic, social, cultural and environmental development of County Clare. It provides the platform for Clare County Council to ascertain and communicate to other public authorities the views of its citizens in relation to those functions performed by other authorities which affect the interests of County Clare.

3.2.4. Proper Planning and Sustainable Development

When making a development plan, the Planning and Development Act 2000 (as amended) requires Planning Authorities to consider the proper planning and sustainable development of the area. While there is no definition of the term in the Acts, for the purposes of this Plan, proper planning and sustainable development is defined as *“achieving the correct balance of economic, social, cultural and environmental considerations in the interests of the common good and securing long term benefits to County Clare.”*

3.2.5. Monitoring and Progress

A development plan must be able to respond to changing circumstances within its lifetime. Regular monitoring of the relationship between the plan and changes within a wider EU and national policy context, development pressures and varying local priorities are important if the policies and objectives are to remain effective and relevant throughout the lifetime of the plan. The impact of policies and specific objectives should wherever possible be quantified.

To provide a quality service focused on the needs of our customers / citizens during the lifetime of the Clare County Development Plan 2017 – 2023 and in line with the Corporate Plan, the implementation of the plan and its importance in assisting applicants for planning permission, communities, statutory bodies, investors and voluntary groups will be monitored by Clare County Council.

It is a requirement under the Planning and Development Act 2000 (as amended) for a report to be prepared, two years after the making of the plan, on the progress achieved in securing the objectives of the development plan. This Progress Report is necessary because, under the Act, it is the duty of

the Planning Authority to *“take such steps as are in its powers as may be necessary for achieving the objectives of the Development Plan”*.

The SEA process through the recommendation of mitigation measures, by its nature requires environmental monitoring throughout the lifetime of the 6-year development plan.

To assist in the monitoring of this development plan, Clare County Council will set up systems to monitor planning and development in the County to help measure the degree to which the objectives are being achieved. A monitoring group with agreed terms of reference comprising 12 Elected Members with at least 2 Elected Members from each electoral area shall be established and will meet quarterly with the Director of Service/Senior Planner. This group shall receive feedback from electoral area level as necessary. The Council will also establish mechanisms for measuring customer satisfaction within the planning service.

Chapter Four - Relationship with other Plans and Policies

4.1 Introduction

In line with Paragraph (e) of Schedule 2B of the Planning and Development (SEA) Regulations 2004 (as amended), this Environmental Report must identify *‘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’*.

The Clare County Development Plan 2017-2023 sits within a clear hierarchy of spatial policy documents. The hierarchy of strategies, policies and plans follows a format which commences with high level International and/or EU documents feeding progressively downwards into site specific local plans and policies.

As this is a County Development Plan, it is at an important level in terms of the development of County Clare, though it must adhere to policy and strategic options which are pre-determined by higher level plans and guidelines. The County Development Plan will be affected by, and will affect a wide range of other relevant plans and programmes, and environmental objectives. It is therefore important to identify relevant plans and programmes which will affect the new County Development Plan and must be examined in the context of the Strategic Environmental Assessment.

Chapter 8 of this Environmental Report contains sets out the relevant legislation and policy documents, ongoing key strategies, plans and programmes, and their interaction with the existing Plan.

As noted above it is important in terms of the development of County Clare that the Plan adheres to policy and strategic options which are pre-determined by higher level plans and guidelines. Therefore, this Chapter identifies and summarises the relevant International, European Union and National legislation and policy documents, strategies and guidelines that set the context for this SEA process and the Clare County Development Plan 2017 - 2023. Concurrently, it is highlighted how due consideration was given to each document in the plan- making and SEA processes.

From the onset a distinction must be made between the different sets of objectives, which have an influence on the preparation of the Clare County Development Plan 2017-2023. International and National strategies and policies have a strong role to play in establishing higher level agendas such as climate change, while the Clare County Development plan objectives are more specific and localised in their orientation. Additionally, a third set of objectives, i.e. environmental objectives (see Chapter 6 on Strategic Environmental Objectives) must also be taken into account. These are categorised as per the environmental parameters set out in Schedule 2B ‘Information to be Contained in an Environmental Report’ of the SEA Regulations 2004 (as amended), namely; biodiversity, flora and fauna, population, soil and geology, air and climatic factors, water, cultural heritage, material assets and landscapes. Other areas include; sustainable development, strategic development, SEA, EIA and the environment in general. it

should be noted that this list is comprehensive but not exhaustive and will be amended throughout the plan review and preparation process as new policy, guidance plans programmes, etc. are adopted.

4.2 Population, Human Health & Quality of Life

National Spatial Strategy 2002-2020

The Irish Government published the National Spatial Strategy (NSS) in November 2002 with its main objective being the achievement of more balanced Regional development. The Strategy is a twenty-year planning framework designed to achieve a better balance of social, economic and physical development, and population growth between the regions.

Within the NSS, Ennis is designated a Hub town, selected because of its close relationship in economic and other terms with the Mid West and Limerick and Shannon in particular as designated 'Gateway'. Its strategic location, its large and growing population base and its capacity for growth have identified Ennis as a town with a nationally strategic role. As the County town Ennis is strategic within its own catchment in terms of transport, retailing, employment, education and administration functions. The NSS also identifies within the Mid-West the existing Limerick/Shannon gateway and the need for it to be strengthened. It gives due recognition to the international airport at Shannon and various ports in the Shannon estuary and also provides support to the importance of roads and public transport connections between Shannon and Galway. To this end the objectives of the Clare County Development Plan 2017-2023 are broadly consistent with this Strategy.

National Development Plan, 2007-2013: Transforming Ireland – A Better Quality of Life for All

The National Development Plan *Transforming Ireland — A Better Quality of Life for All* sets out the development objectives for Ireland over the period 2007 - 2013. This Plan proposes to invest some €184 billion in economic and social infrastructure, the enterprise, science and agriculture sectors, the education, training and skills sector, environmental services and in the social fabric of society. The five 'Investment Priorities' of the plan are; Economic Infrastructure; Enterprise, Science and Innovation; Human Capital; Social Infrastructure; and Social Inclusion. The Plan's investment in programmes which will provide a direct and positive impact on environmental sustainability will be complemented by the Plan's Regional Development Strategy based on the framework of the National Spatial Strategy, including land use policy that is environmentally sustainable. The objectives of the Clare County Development Plan 2017-2023 are broadly consistent with the National Development Plan.

EU Environmental Action Programme to 2020

The 7th EU Environmental Action Programme is more strategic in nature and identified three main areas to guide EU environmental policy and research. It will be guiding European environmental policy until 2020. In order to give more long-term direction it sets out a vision beyond that, of where it wants the Union to be by 2050. It identifies three key objectives:

- to protect, conserve and enhance the Union's **natural capital**
- to turn the Union into a **resource-efficient**, green, and competitive low-carbon **economy**

- to **safeguard** the Union's citizens from **environment-related pressures** and risks to health and wellbeing

Four so called "enablers" will help Europe deliver on these goals:

- better **implementation** of legislation
- better **information** by improving the knowledge base
- more and wiser **investment** for environment and climate policy
- full **integration** of environmental requirements and considerations into other policies

Two additional horizontal priority objectives complete the programme:

- to **make** the Union's **cities more sustainable**
- to help the Union **address international environmental and climate challenges more effectively.**

The programme entered into force in January 2014. It is now up to the EU institutions and the Member States to ensure it is implemented, and that priority objectives set out are met by 2020.

A key element in relation to this land use plan is the integration of environmental considerations including water protection and biodiversity conservation into land use planning decisions, with a view to making progress towards the objective of no net land take by 2050.

Our Sustainable Future: A Framework for Sustainability 2012

Our Sustainable Future takes account of developments at international and EU level designed to deliver an effective transition to an innovative, low carbon and resource efficient future. It has followed the model used in the EU Sustainable Development Strategy, which focuses on identifying key gaps where progress has been limited since the 1997 National Sustainable Development Strategy and it aims to set out a range of measures to address the outstanding challenges. It sets out 70 measures that will ensure we improve our quality of life for current and future generations and sets out clear measures, responsibilities and timelines in an implementation plan. These include areas such as the sustainability of public finances and economic resilience, natural resources, agriculture, climate change, transport, public health, education, innovation and research, education, skills and training, and global poverty.

Sustainable Development - A Strategy for Ireland, 1997

This 1997 policy document established the first overall national level policy framework addressing sustainable development in Ireland. The central aim of the Sustainable Development Strategy is to systematically apply principles of sustainability to policy-making and to integrate them into the decision-making process. It addresses all areas of Government policy and of economic and societal activity which impact on the environment. The overall goal of the strategy is therefore to ensure that the country can develop to its full potential, without compromising the quality of the environment for present and future generations. The strategy provides a comprehensive analysis and framework

to allow sustainable development to be taken forward more systematically in Ireland. It reflects Ireland's commitment to the principles and agenda for sustainable development agreed at the Earth Summit in Rio in 1992. It also puts in place mechanisms for monitoring and reviewing progress. It was framed to '*ensure that economy and society in Ireland can develop to their full potential within a well protected environment*'. The objectives of the Clare County Development Plan 2017-2023 are broadly consistent with the objectives of this Strategy.

National Sustainable Development Strategy, 1997 and Making Ireland's Development Sustainable, 2002

The aim for Ireland outlined in the Sustainable Development Strategy (1997) is "to ensure that economy and society in Ireland can develop to their full potential within a well protected environment, without compromising the quality of that environment and with responsibility towards present and future generations and the wider international community". The subsequent report in 2002 "Making Ireland's Development Sustainable" was a five-year review of the original 1997 Strategy. The overall tenet of the Strategy is to balance economic growth with a continued commitment to promoting environmental quality. The objectives of the Clare County Development Plan 2017-2023 are broadly in line with these Strategies.

Guidelines on Sustainable Residential Development in Urban Areas 2009

The Guidelines on Sustainable Residential Development in Urban Areas set out a number of aims for successful and sustainable residential development in urban areas. There is a need for future urban residential development to:

- Prioritise walking, cycling and public transport, and minimise the need to use cars;
- Deliver a quality of life which residents and visitors are entitled to expect, in terms of amenity, safety and convenience;
- Provide a good range of community and support facilities, where and when they are needed;
- Present an attractive, well-maintained appearance, with a distinct sense of place and a quality public realm;
- Facilitate ease of access and finding one's way around;
- Promote the efficient use of land and of energy, and minimize greenhouse gas emissions;
- Provide a mix of land uses to minimise transport demand;
- Promote social integration and provide accommodation for a diverse range of household types and age groups; and
- Enhance and protect the built and natural heritage.

The Guidelines set out the key planning principles which should be included in statutory plans in order to achieve these aims. The objectives of the Clare County Development Plan 2017-2023 are broadly in line with these Guidelines.

Sustainable Rural Housing Guidelines 2005

The guidelines, published by the Department of the Environment, Heritage and Local Government, have identified a number of key policy requirements to be considered in the making of a statutory plan, including:

- Preserving the quality and character of urban or rural areas;
- Protecting and preserving the quality of the environment; including the prevention, limitation, elimination, abatement or reduction of environmental pollution and the protection of waters, groundwater, the seashore and the atmosphere;
- Protecting features of the landscape which are of major importance for wild fauna and flora;
- Preserving the character of the landscape, including views and prospects, and the amenities of places and features of natural beauty or interest. In dealing with the issue of housing in rural areas, the Guidelines also identify that the statutory plan is required to detail:
 - Links to the housing strategy as the overarching policy context in relation to future housing needs;
 - Overall objectives and associated policies for rural settlement;
 - Objectives in relation to the various aspects of the natural and cultural heritage;
 - Objectives in relation to the identification and protection of key natural assets such as surface and ground water resources, minerals and aggregates;
 - Objectives in relation to the future development and safe operation of transport infrastructure.

The objectives of the Clare County Development Plan 2017-2023 relating to development in key settlements are consistent with these Guidelines.

The Mid-West Regional Planning Guidelines 2010-2022

The Mid West Regional Planning Guidelines (MWRPG's) 2010-2022 give effect, at a Regional level, to the National Planning Framework put forward in the National Spatial Strategy (NSS) and National Development Plan (NDP). The MWRPG's provide a Regional framework for the formulation of policies and strategy in the County Development Plan and seek to ensure the proper balance between the different settlements in the region with regard to development, population and services. The Guidelines present an updated Regional settlement strategy. They also set out 'Population Targets' for the region and for each County, including County Clare, which have been formulated having regard to the January 2009 'population targets' issued by the Department of Environment, Heritage and Local Government and supplementary guidance of August and October 2009. Furthermore, the Guidelines outline a range of criteria for Development Plans in the context of population and settlement and identify strategic infrastructure investments for the region. This Regional guidance has influenced the development of the settlement strategy for County Clare. The MWRPG's 2010-2022 continue the 'Zone' based strategy (Zone 1 – Zone 8) that was employed in the 2004 Guidelines, outlining the development potential and needs of each zone in turn.

Mid-West Area Strategic Plan (MWASP) 2012-2030

The Mid-West Strategic Area Plan (MWASP) is a strategy to facilitate a regional population of 500,000 that has been set in a 20 year time frame. Its key objectives include prioritisation of investment in the Mid-West region, supporting the hierarchy of settlements and improving connectivity within the region. One of the high level objectives of the plan is to strengthen the Limerick/Shannon gateway, and Ennis as hubs in terms of population growth. One of the outcomes of the strategy is a requirement for significant public transport investment. The MWASP identifies a number of Rural Economic Nodes (REN), Ennis being one of the nodes and as a settlement which is a key service centre in the Regional Planning Guidelines. The RENs are essential to the success of the MWASP strategy as they will act as a focal point for linking rural areas and larger urban centres. MWASP provides a framework within which the physical and spatial development of the region can be developed to 2030 and is therefore particularly relevant to the strategic integrated landuse and transportation planning and development and provision of future infrastructure envisaged for the county and for the Shannon Estuary. The Clare County Development Plan 2017-2023 is consistent with this document having regard to objectives for the settlement hierarchy, its objectives to encourage provision and use of public transport and other sustainable forms of transport in order to reduce the carbon footprint.



Limerick/Clare Joint Housing Strategy 2010-2017

Part V of the Planning and Development Act 2000 (as amended) places an onus on all Local Authorities to prepare a Housing Strategy in respect of the area of the development plan. The Housing Strategy is the vehicle to address overall housing needs and continue to focus on housing affordability, the provision of private, social and affordable housing and the implementation of Part V of the Planning and Development Act, 2000 (as amended). Clare County Council, in conjunction with Limerick County Council and Limerick City Council, has prepared a Joint Housing Strategy for 2010-2017 as provided for in Section 94 (e) of the Planning and Development Act 2000 (as

amended). This Housing Strategy replaces the County Clare Housing Strategy 2007-2011. In accordance with Section 95 1(a) of the Act the Councils must ensure that sufficient and suitable land is zoned to meet the requirements of the Housing Strategy over the lifetime of the Development Plan. This Strategy is included in *the Clare County Development Plan 2017 - 2023 as Volume 9 which comprises the Joint Housing Strategy for Clare Local Authorities and Limerick City & County Councils*, it is given effect by objectives contained in Chapter 4 – ‘Housing’ of the CCDP 2017-2023. The Joint Housing Strategy is consistent with the National Spatial Strategy and takes into account the Mid West Regional Planning Guidelines 2010-2022 and the County and City level population targets. It also details housing demand analysis. The policies of the Housing Strategy are consistent with those outlined in the Clare County Development Plan 2017 - 2023.

County Clare Enterprise Strategy, 2012 - 2014

The County Clare Enterprise Strategy creates a framework within which the County can address the challenges and opportunities which exist for the continued growth and development of enterprise in Clare.

The strategy sets out six high-level strategic enterprise goals:

- Increase the quantity and quality of Research and Development
- Increase the scale of enterprises
- Increase the quality and adaptability of the labour force
- Increase competitiveness
- Increase innovation
- Achieving spatially balanced enterprise development as an over-arching strategic goal.

The policies and objectives of the Clare County Development Plan 2017-2023 are broadly consistent with this Strategy.

County Clare Social Inclusion Strategy, 2002-2012

Shaping the Future – Integrated Strategy for the Social, Economic and Cultural Development of County Clare, prepared by the County Development Board, was published in 2002. The Strategy provides a comprehensive framework of how County Clare should develop over the period 2002-2012. The report details the need for the strategy, the challenges facing the Mid-West Region as a whole and the values and needs that shaped the objectives and aims of the strategy. Furthermore it provided work programmes in the areas of agriculture, economic development, community development, health, infrastructure and tourism (including culture and heritage) and methodology for implementation, monitoring and review of the Integrated Strategy. In the report, areas of the west, north and north-east of Clare are recognised as the most disadvantaged. Furthermore the north and west of the county have the largest proportion of population that are living alone and are elderly. Challenges to the social infrastructure of the county are apparent. Similarly there are challenges in the preservation and sustainable use of the natural resources in both the coastal and lake areas of the County.

In 2009, a review was carried out to identify priority areas for the period 2010-2012. A range of areas including social inclusion, environment, rural development, tourism, quality of life, climate change and energy were highlighted as topics that warranted focused strategies. This Social Inclusion Strategy 2010-2012 focuses on addressing the particular needs of individuals and groups who experience poverty and exclusion. Where applicable the Clare County Development Plan 2017-2023 reflects the aims and objectives of the County Clare Social Inclusion Strategy 2010-2012.

Clare Local Authorities Social Inclusion & Accessibility Strategy, 2011- 2014

This is the first Clare Local Authorities Social Inclusion & Accessibility Strategy. Inclusion and access are implicit in the work of local authorities, but this strategy aims to identify social inclusion and accessibility as fundamental to the manner in which council services and facilities are planned and delivered. Social Inclusion is embedded as one of 6 objectives in the Strategy: 'To promote social inclusion and participation of all communities and combat marginalisation'. Where applicable the Clare County Development Plan 2017-2023 reflects the aims and objectives of the Social Inclusion & Accessibility Strategy 2011-2014.

Limerick and Clare Sports and Physical Recreation Strategy, 2012

Over recent years the significant improvements in the traffic and transport infrastructure of the Mid-West region has resulted in substantial increases in both intra and inter-regional accessibility. This means that facilities and other recreation resources that may not have been accessible in a meaningful way have now become more accessible to the population of the region and visitors alike. Sports and recreational infrastructure has, historically, been largely provided by local communities in towns, rural areas and counties. With some notable exceptions (major sporting facilities for example), facilities and infrastructure has often been put in place with the intention of providing for a local population and its visitors alone. Often, little thought has been given to the potential of the facility to serve a wider population outside the community or the applicable administrative area as a whole. This has sometimes resulted in the wasteful duplication of facilities, difficulties being experienced by the owners and management of the facilities in ensuring their on-going viability and under-utilisation of expensive infrastructure. To address these issues the Limerick and Clare Sports and Physical Recreation Strategy (LCSPRS) was developed. Where applicable the Clare County Development Plan 2017-2023 reflects the aims and objectives of the Limerick and Clare Sports and Physical Recreation Strategy 2012.

Aarhus Convention, 1998

Ireland ratified the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, commonly referred to as the Aarhus Convention, on 20th June 2012.

The Aarhus Convention was adopted on 25th June 1998 in the Danish city of Aarhus at the Fourth Ministerial Conference in the 'Environment for Europe' process. It lays down a set of basic rules to promote the involvement of citizens in environmental matters and improve enforcement of environmental law. The Convention is legally binding on States that have become Parties to it. As the European Union is a Party, the Convention also applies to the EU institutions.

Ireland signed the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters on 25 June 1998.

The Three Pillars of the Convention:

The provisions of the Aarhus Convention are broken down into three pillars: access to information, public participation in decision-making and access to justice. Articles 4 and 5 of the Convention concern environmental information. Members of the public are entitled to request environmental information from public bodies and these bodies are obliged to maintain this information. This includes information on the state of the environment, policies and measures taken, or on the state of human health and safety, where this can be affected by the state of the environment. Some information is exempt from release, for example where the disclosure would adversely affect international relations, national defence, public security, the course of justice, commercial confidentiality or the confidentiality of personal data. Information may also be withheld if its release could harm the environment, such as the breeding sites of rare species. The Access to Information pillar has been implemented in the EU Directive 2003/4/EC on Public Access to Environmental Information and in Ireland by the European Communities (Access to Information on the Environment) Regulations 2007-2011.

4.3 Biodiversity, Fauna and Flora

The Ramsar Convention on Wetlands of International Importance (1971 and amendments)

Ramsar sites are sites that are considered to be of international importance ecologically, especially with regard to wetland waterfowl. The objectives include the protection and conservation of wetlands, particularly those of importance to waterfowl as Waterfowl Habitat. There are two Ramsar Sites in the Plan area – Ballyallia Lake (site code 845) and Inner Galway Bay (site code 838).

UN Convention on Biodiversity, 1992

This United Nations Convention on Biological Diversity introduced an obligation for states to adopt measures via plans and programmes that act as incentives for the conservation and sustainable use of biological diversity and to ensure that the benefits arising from the use of genetic resources are shared in an equitable manner.

Strategic Environmental Assessment (SEA) Directive (2001/42/EC)

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 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 a significant effects on the environment.

EIA Directive

Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997,

Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given.

The Habitats Directive, 1992

The Habitats Directive (Council Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora aims to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in Europe. The Habitats Directive establishes a network of internationally important sites designated for their ecological status, which are known in Ireland as Natura 2000 sites. These comprise of Special Areas of Conservation (SACs) designated under the Habitats Directive including candidate SACs (cSAC); and Special Protection Areas (SPAs) designated under Council Directive (79/409/EEC) on the conservation of wild birds including proposed SPAs (pSPAs). The Birds and Habitats Directive collectively, set out various procedures and obligations in relation to nature conservation management. A key mechanism is the requirement to consider possible nature conservation implications of any plan or project on the Natura 2000 site network before any decision is made to allow that plan or project to proceed. The key difference between the SEA Directive and the Habitats Directive can be summarised as follows; the SEA Directive requires the planning authorities to assess the likely significant environmental effects of plan on the environment at a strategic level, while HDA is more focused and requires more rigorous tests, with the conservation and protection of Natura 2000 sites at its core. The recent DoECLG Circular PSSP/5/2011 *‘Compliance of existing land use plans with the EU Habitats Directive’* issued on 1st July 2011 reiterates the compliance to undertake a Habitats Directive Assessment on land use plans. Clare County Council is in accordance with this direction in conducting an Appropriate Assessment for the Clare County Development Plan 2017-2023 which is undertaken as a separate but parallel process to the SEA, resulting in a written Natural Impact Report (NIR). The Habitats Directive Assessment was carried out with reference to the National Parks and Wildlife Service Report *‘The Status of EU Protected Habitats and Species in Ireland 2013’* and having regard to *‘Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities’* (2009).

Birds Directive, 1979

Birds Directive (79/409/EEC - on the Conservation of Wild Birds) is the EU’s oldest piece of nature legislation and one of the most important, creating a comprehensive scheme of protection for all wild bird species naturally occurring in the Union. It was adopted unanimously by the Member States including Ireland in 1979 as a response to increasing concern about the declines in Europe’s wild bird populations resulting from pollution, loss of habitats as well as unsustainable use. It was also in recognition that wild birds, many of which are migratory, are a shared heritage of the Member States and that their effective conservation required international co-operation. (Directive 2009/147/EC is the codified version of Directive 79/409/EEC as amended).

European Communities (Bird and Natural Habitats) Regulations 2011

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.

Green Infrastructure Strategy, 2013

The European Commission in May 2013 adopted a Green Infrastructure Strategy, ‘to promote the deployment of green infrastructure in the EU in urban and rural areas’. This is a key step in implementing the EU 2020 Biodiversity Strategy and specifically Target 2 that requires that ‘by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems’. Green Infrastructure (GI) is contributing to all other targets of the EU Biodiversity strategy – in particular the full implementation of the Birds and Habitats Directive (target 1) and to maintain and enhance biodiversity in the wider countryside and the marine environment (targets 3 and 4).

The Green Infrastructure Strategy responds to action 6b of the Biodiversity Strategy and to the Roadmap on a Resource Efficient Europe which foresees that the Commission will put forward a communication on Green Infrastructure. It is supported by the different actions under target 2:

- Action 5, Mapping and Assessment of Ecosystems and their Services (MAES), shall help reinforce the baseline against which the value of the benefits that nature provides to human society can be valued, and investments in GI can be measured;
- Action 6a, the establishment of a Restoration Prioritisation Framework (RPF), shall support the prioritisation of restoration in the context of GI;
- Action 7a, Biodiversity proofing, seeks to mainstream consideration for biodiversity in key EU funds and promote the funding of projects with a positive impact on biodiversity, which includes GI projects.
- Action 7b on No-Net-Loss (NNL) will support the implementation of GI through developing an initiation that ensures there is no net loss of ecosystems and their services e.g. through compensation or offsetting scheme.

National Heritage Plan, 2002 - 2006

The National Heritage Plan was published by the Department of Arts, Heritage and the Islands in 2002. The purpose of the National Heritage Plan is to set out a clear and coherent strategy and framework for the protection and enhancement of Ireland’s heritage. The goals of the Plan are in line with the principles underlying the Government’s Policy Statement on Heritage. The Plan is published in fulfilment of a commitment in the Government’s Action Programme for the Millennium. A review of the National Heritage Plan by the Department of the Environment, Community and Local Government is proposed, but a timeframe for the review has not yet been established. However, the objectives of the Clare County Development Plan 2017-2023 are broadly consistent with the current National Heritage Plan.

The Wildlife Act, 1976

The Wildlife Act, 1976, which came into effect on 1 June 1977, was the principal national legislation providing for the protection of wildlife and the control of some activities that may adversely affect wildlife, prior to being amended in 2000. It was the only major legislation concerned with wildlife

that was passed in the previous 45 years. It replaced the Game Preservation Act, 1930, and the Wild Birds (Protection) Act, 1930. The aims of the Wildlife Act, 1976, are to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims.

Wildlife (Amendment) Act, 2000

Wildlife (Amendment) Act, 2000 supersedes the Wildlife Act of 1976. Natural Heritage Areas are designated and protected due to their national conservation value for ecological and/or their geological/geomorphological heritage under the Wildlife (Amendment) Act 2000. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. The objectives of the Clare County Development Plan 2017-2023 take the provisions of this Act into consideration.

National Biodiversity Plan 2011 - 2016

The National Biodiversity Plan 2002 requires each County to produce a Local Biodiversity Action Plan, County Clare was one of the first local authorities to do so. The main functions of a Local Biodiversity Action Plan are to translate International and National policies and legislation into effective local action on the ground and to raise public awareness of and involvement in the conservation of biodiversity. The LBAP process will identify all the habitats and species present in Clare and prioritise the vital actions necessary to conserve biodiversity of both National and local importance. Clare hosts a wide range of animal and plant species as well as some of the best examples of threatened habitats in Europe. The Clare LBAP highlights just a small number of the thousands of animal and plant species living in Clare. There are about 55 mammals (land and sea), 780 higher plant species, 400 seaweed species and 21 freshwater fish species (10 native, 11 introduced) which occur in the wild in County Clare. The Shannon estuary is the most important sites in Ireland for over- wintering wildfowl and waders and home to the only known resident group of Bottlenose dolphins in Ireland. Clare is also internationally noted for many species such as Pine martens, Butterflies, Moths and Lesser Horseshoe bats. The aims and objectives of the Clare County Development Plan 2017-2023 are consistent with this Plan.

All-Ireland Pollinator Plan 2015 – 2020

The All-Ireland Pollinator Plan 2015-2020 makes Ireland one of the first countries in Europe with a strategy to address pollinator decline and protect pollination services. The Plan identifies actions that can be taken on farmland, public land and private land. These include creating pollinator highways along our transport routes, making our public parks pollinator friendly and encouraging the public to see their gardens as potential pit-stops for our busy bees. It is also about raising

awareness on pollinators and how to protect them. With the support of organisations like An Taisce Green-Schools, it aims to ensure that everyone, from schoolchildren to farmers, gardeners, local authorities and businesses, knows what pollinators need and which simple cost-effective actions they can take to help. The Plan will also support Ireland's bee-keepers in keeping our Honeybees healthy. The Pollinator Plan is not just about protecting bees but also about

protecting the livelihood of farmers and growers who rely on their ‘free’ pollinator service, which allows consumers to buy Irish fruit and vegetables at an affordable price.



This service is worth over £7 million per annum for apples in Northern Ireland, and €3.9 million for oilseed rape in the Republic of Ireland. It's not just crops; about three-quarters of our wild plants also require insect pollinators. Without pollinators the Irish landscape would be a very different and much less beautiful place. The value of pollination to tourism and branding our produce abroad is enormous, but has never been assessed in a monetary sense.

Review of Raised Bog Natural Heritage Area Network

The review of Ireland's network of raised bog NHAs (entitled Review of Raised Bog Natural Heritage Area Network) was published in January 2014. Its objective was to fundamentally review the current NHA network and set out a series of measures to ensure that Ireland meets its obligations under the Habitats Directive to maintain or restore raised bog habitat to favourable conservation status and its Environmental Impact Assessment Directive obligations relating to the regulation of turf cutting on NHAs; whilst avoiding unnecessary impacts on the traditional rights of landowners and users and minimising the cost to the State. As part of the review over 270 raised bog sites were scientifically examined and evaluated including 53 raised bog Special Areas of Conservation (SACs), the existing 75 raised bog NHAs and over 100 other non-designated sites.

As a result of the review a reconfigured NHA network is proposed. That network has the following advantages over the current network:

1. The areas of both Active Raised Bog and Degraded Raised Bog Still Capable of Natural Regeneration (both protected habitats under the Habitats Directive) will be greater in the new network than in the current network.
2. The new network will significantly improve the geographical range of protected sites to the East, South, West and North.
3. In the short to medium term losses of active bog will be reduced, due to the lower intensity of recent turf - cutting in the new network.
4. Management complexity in the new network will be much lower due the lower number of sites, high bog area and number of active turf cutters and landowners.

5. The inclusion of some large Bord na Mona sites will facilitate more rapid restoration in comparison to smaller privately owned sites.
6. Costs to the tax-payer will be greatly reduced due to the smaller number of turf-cutters requiring to stop turf-cutting and requiring compensation (over. 2,500 fewer turf-cutters will be affected in the new network).

The review identifies a series of steps to ensure that Ireland meets its Habitats Directive obligation to maintain or restore raised bog habitat to favourable conservation status and its Environmental Impact Assessment Directive obligations relating to the regulation of turf cutting on NHAs.

National Peatlands Strategy (2015)

A national strategy on conservation and management of Ireland's peatlands, it applies to all peatlands including peat soils as well as those designated as Special Areas of Conservation (SAC) and Natural Heritage Areas. It establishes a vision, values and principles to guide policy relating to peatlands. The strategy applies to all peatlands, including peat soils. The strategy is aimed at peatland owners, users and the broader community which benefits from the services that peatlands provide. It is also aimed at policy and decision makers. The choices that are made in peatland management can contribute to or detract from the achievement of objectives and obligations for the common good entered into by the State under International agreements, EU and national law. Water quality, flood control, fisheries, rivers streams and lakes, protected wildlife, air quality and climate change will be affected in different ways, depending on the choices that are made. This Strategy aims to ensure that the relevant State authorities and state owned companies that influence such decisions contribute to meeting cross-cutting objectives and obligations in their policies and actions.

Draft Raised Bog SAC Management Plan (2014)

At the time of writing, this management plan was still in draft format therefore the dedicated raised bog conservation website should be accessed for up-dates in relation to same.
<http://www.raisedbogconservation.com/>

The draft plan has two primary aims the conservation and management of raised bogs and addressing the needs of turfcutters and landowners. The plan scientifically assessed the raised bog habitats including designated sites and identified bogs not designated but of potential conservation value. Conservation objectives were set in the draft plan in addition to a number of means to achieve these objectives. Fourteen measures are identified over a timeframe with the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs as the lead agency. The Raised Bog Conservation Study has been granted a one year extension to March 2016, due to the significant amount of work required to finalise the National raised Bog SAC Management Plan. It is envisaged that the final plan will be published by the end of 2015 or early 2016 to allow for adequate consideration and follow up of the issues raised during the stakeholder consultation.

Draft Bio-Energy Plan 2014

The Draft Bioenergy Plan sets out a vision of Ireland’s bioenergy resources contributing to economic development and sustainable growth, generating jobs for citizens, supported by coherent policy, planning and regulation, and managed in an integrated manner.

Three high level goals, of equal importance, based on the concept of sustainable development have been identified:

- To harness the market opportunities presented by bioenergy in order to achieve economic development, growth and jobs
- To increase awareness of the value, opportunities and societal benefits of developing bioenergy
- To ensure that bioenergy developments do not adversely impact the environment and its living and non-living resources

The aims and objectives of the Clare County Development Plan 2017-2023 had regard to this Plan.

Clare Local Biodiversity Action Plan 2014 – 2017

The Clare Biodiversity Action Plan 2014-2017 is the second such Plan for County Clare, and supersedes the first Clare Biodiversity Action Plan, which was published in 2006. The Plan is informed by the strategic aims of the National Biodiversity Plan (Actions for Biodiversity 2011-2016: Ireland’s National Biodiversity Plan), and complements the County Clare Heritage Plan 2011-2017.

The Clare Biodiversity Action Plan aims to conserve the biodiversity of County Clare, through raising awareness of County Clare’s biodiversity, co-ordinating a targeted biodiversity education programme for all ages and abilities, recording the biodiversity of County Clare, the production of best practice guidance for biodiversity management and conservation, and supporting individuals and organisations working towards biodiversity conservation in County Clare. Similar to the objectives of the National Biodiversity Plan, the Clare Biodiversity Action Plan 2014-2017 is consistent with the ‘ecosystem approach’. The ecosystem approach ensures that all of the essential processes, functions and interactions between species, their habitats and their local, non-living environment have been taken into account when promoting best practice management and guidelines for biodiversity conservation. The aims and objectives of the Clare County Development Plan 2017-2023 are consistent with this Plan.

County Clare Heritage Plan 2011- 2017

The main aim of the County Clare Heritage Plan is to increase stakeholder knowledge of the heritage of County Clare and to ensure that any decisions on the future development of the County are made, keeping in mind the protection of the County’s heritage assets. Its aim is to ensure that legitimate change can take place in the County while retaining the character, quality and integrity of its heritage. The aims and objectives of the Clare County Development Plan 2017-2023 are consistent with this Plan.

4.4 Soil & Geology

At present, there is no legislation which specifically deals with the protection of soil resources. The European Commission in September 2006 adopted the Soil Thematic Strategy which contains four key pillars, namely awareness raising, research, integration, and legislation. The overall aim of the strategy is to ensure that Europe's soils remain healthy and capable of supporting human activities and ecosystems. The Soil Thematic Strategy originally included a proposal for a Soil Framework Directive. This originated from the need to ensure a sustainable use of soils and protect the function in a comprehensive manner in a context of increasing pressure and degradation of soils across the EU. Taking note that the proposal has been pending for almost eight years without a qualified majority in the Council in its favour, the Commission on the 30th of April 2014 took the decision to withdraw the proposal for a Soil Framework Directive, opening the way for an alternative initiative in the next mandate. The commitment to sustainable soil use is in line with the Seventh Environment Action Programme, (7th EAP) which provides that by 2020 *"land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway"* and commits the EU and its Member States to *"increasing efforts to reduce soil erosion and increase organic matter, to remediate contaminated sites and to enhance the integration of land use aspects into coordinated decision-making involving all relevant levels of government, supported by the adoption of targets on soil and on land as a resource, and land planning objectives"*. It also states that *"The Union and its Member States should also reflect as soon as possible on how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework"*.

Against that background, two initiatives have been launched:

- Establishment of an Expert Group to implement the soil protection provisions of the 7th Environment Action Programme, composed by experts mandated by Member States to support the Commission in this work.
- Open Call for tender for a service contract to deliver an updated and detailed picture of policies and measures at EU, Member State and - where applicable - regional level, contributing (directly or indirectly) to soil protection.

Quarries and Ancillary Activities, guidelines for Planning Authorities (2007)

These guidelines are intended to offer guidance to planning authorities on planning for the quarrying industry through the development plan and determining applications for planning permission for quarrying and ancillary activities (Part A). Whilst Part B provides a practical guide to the implementation of section 261 of the Planning and Development Act, 2000.

A number of new legislative provisions in relation to quarries have recently been commenced. These provisions are contained chiefly in the Planning and Development (Amendment) Act 2010 and the Environment (Miscellaneous Provisions) Act 2011, relevant provisions of which were commenced on the 15th of November 2011.

Food Wise 2025 – Department of Agriculture, Food and Marine

Food Wise 2025, the Report of the 2025 Agri Food Strategy Committee, sets out a cohesive, strategic plan for the development of agri-food sector over the next decade. The Committee has identified that opportunities will arise as a result of significant population growth and greater access to international markets. In addition, the Committee recognises that the increased pressure on global agricultural resources and the environment will offer potential further growth opportunity for the Irish agri-food and fisheries sector.

Food Wise 2025 has harnessed the collective wisdom, foresight and knowledge of leading industry stakeholders and sets a course for the industry of smarter greener growth over the next decade. It foresees a sector that acts more strategically and achieves a competitive critical mass in the international marketplace while targeting more quality conscious consumers who will recognise and reward Ireland's food producers for their sustainable production and high quality produce.

The long-term vision as set out in the Report is of 'Local Roots Global Reach' based on the continued development of the sector where efficient and environmentally-friendly production delivers sustainable export growth on global markets. The Committee believes that achieving this vision will benefit primary producers, processors and the food manufacturing sector, as well as the wider economy.

On the basis of available data and by taking the actions identified in the Report, the Committee has set the following growth projections, which it believes are achievable by 2025:

- Increasing the value of agri-food exports by 85% to €19 billion.
- Increasing value added in the agri-food, fisheries and wood products sector by 70% to in excess of €13 billion.
- Increasing the value of Primary Production by 65% to almost €10 billion
- The creation of an additional 23,000 direct jobs in the agri-food sector all along the supply chain from primary production to high valued added product development.

To achieve the projections set out above, Food Wise 2025 identifies over 400 recommendations to achieve sustainable growth and these will require a concerted and coordinated approach by primary producers, industry, Departments and State agencies.

The Department has prepared a Food Wise Implementation Plan which forms the final part of the Food Wise strategy process. Food Wise Implementation Plan includes a supplementary list of Food Wise 2025 sustainability actions in response to the final Environmental Analysis. It sets out a robust implementation process, to be driven by a High Level Implementation Committee (HLIC) involving all relevant Government Departments and State Agencies, and chaired by the Minister for Agriculture, Food and the Marine. This implementation process will seek to enhance the regulatory and administrative environment in which the sector operates, and facilitate the achievement of the sustainable growth potential of the sector set out in Food Wise 2025, thus optimising the sector's contribution to the economy, the environment and the social wellbeing of the country.

4.5 Water

The Water Framework Directive, 2000

The Water Framework Directive (WFD), European Directive 2000/60/EC sets a framework for the comprehensive management of water resources in the European Community. It addresses inland surface waters, estuarine and coastal waters and groundwater. The WFD has been transposed into Irish legislation by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003). The fundamental objective of the WFD is to maintain a “high status” of waters where it exists, preventing any deterioration in the existing status of waters and achieving at least “good status” in relation to all waters by 2027. Member States will have to ensure that a co-ordinated approach is adopted for the achievement of the objectives of the WFD and for the implementation of programmes of measures for this purpose. The WFD requires the preparation of river basin management plans by Member States across three river basin planning cycles viz 2009-2015, 2016-2021 and 2022-2027 during which management measures must be implemented so as to achieve good ecological status in all waters.

River Basin Districts (RBDs) must be established to form the basis for this coordinated approach. There are currently eight River Basin Districts (RBDs) on the island of Ireland. Four of these lie solely within Ireland: the Eastern RBD, the South Eastern RBD, the Western RBD and the South Western RBD. Three are international RBDs (IRBDs), the Shannon IRBD, the North Western IRBD and the Neagh Bann IRBD while the North Eastern RBD lies solely within Northern Ireland. The Plan area is located entirely within the Shannon International River Basin District, which is the largest of the Irish River Basin Districts with an area of 18,000km squared.

In July 2010, the first cycle River Basin Management Plans (RBMPs) for Ireland were published, covering the period up to 2015. This marked the culmination of many years of effort in monitoring and assessing Ireland’s surface and ground waters, classifying the waters according to their quality status, and setting objectives with a view to protecting and improving these waters in accordance with the WFD. Work is now underway on the preparation of the next cycle of RBMPs covering the period up to the end of 2021. The RBMPs will describe the main pressures and activities affecting water status, set out the environmental objectives to be achieved up to 2021 and identify the measures needed to achieve these objectives.

Draft RBMPs will be published by December 2016 and the plans will be finalised by the end of 2017.

In delivering the plans outlined above, Ireland is two years behind the timeframes stipulated in the WFD. Therefore, the second round of RBMPs in Ireland will be in place for 4 rather than 6 years and by the 3rd planning cycle we should be back in alignment with the WFD timeframe.

Following a review of governance structures in 2012, the report concluded that there are compelling reasons to amend the current RBD structures. Accordingly, in the draft timetable and work programme for the production of the second cycle of RBMPs (published In July 2014), the Department advised that there will be a single national approach for the development of RBMPs for the second cycle and that the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District. In relation to the North Western and Neagh Bann International River Basin Districts a single administrative area will be

established in the South for the purpose of coordinating water management with authorities in Northern Ireland. This will mean County Clare and the Clare County Development Plan 2017-2023 will be informed in the future by this new national River Basin District.

Surface Water Regulations 2009

Aligned to the Water Framework Directive 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 which dictates that water bodies are required to achieve good status by 2015.

Water Services (Amendment) Act (2012)

The 2012 Act amends the 2007 Water Services Act in order to comply with a European Court of Justice ruling against Ireland in October 2009. The Court found that Ireland had failed to fulfil its obligations under the Waste Directive (75/442/EEC) regarding domestic waste waters disposed of through septic tanks and other individual waste water treatment systems. The new Part 4A requires each water services authority to establish and maintain a register of domestic waste water treatment systems situated within their functional area.

Irish Water Services Strategic Plan SEA and AA

The 25 year plan for the strategic delivery of water services together with the accompanying SEA and AA has been prepared by Irish Water and published in February 2015. It sets out the objectives of Irish Water over a 25 year period and outlines the strategies to achieve these objectives. To achieve Irish Water's vision for future water services, the WSSP sets out six strategic objectives which in turn are underpinned by a series of aims relevant to the various aspects of water services identified in the Water Services (No. 2) Act 2013.

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.

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.

EU Directive 2007/60/EC on the Assessment and Management of Flood Risks

Directive 2007/60/EC of the European Parliament and of the Council on the assessment and management of flood risks, more commonly known as the ‘Floods Directive’ came into force on the 26th of November 2007. The Directive adopted by Council and Parliament requires that Member States take a long-term planning approach to reducing flood risks in three stages:

- Member States will by 2011 undertake a preliminary flood risk assessment of their river basins and associated coastal zones.
- Where real risks of flood damage exist, they must by 2013 develop flood hazard maps and flood risk maps.
- Finally, by 2015 flood risk management plans must be drawn up for these zones. These plans are to include measures to reduce the probability of flooding and its potential consequences.

All stakeholders must be given the opportunity to participate actively in the development and updating of the flood risk management plans. Furthermore, risk assessments, maps, and plans must be made available to the public. The Directive creates an EU framework for flood risk management that builds on and is closely co-ordinated and synchronised with the 2000 Water Framework Directive, the cornerstone of EU water protection policy. Through the undertaking of a Strategic Flood Risk Assessment for the County of Clare which forms Volume 10c of the County Development Plan, areas which have been identified as liable to flood or at risk of flooding are taken account of within the Plan to ensure that only compatible uses are permitted. This ensures the policies and objectives of the Clare County Development Plan 2017-2023 are consistent with the Directive.

The Planning System and Flood Risk Management – Guidelines for Planning Authorities 2009

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 which have been prepared in response to the recommendations of the National Flood Policy Review Group are focused on providing for comprehensive consideration of flood risk, both in preparing regional plans, development plans and local area plans, and in determining applications for planning permission in line with the principles of proper planning and sustainable development. They also take account of environmental considerations including the need to manage the inevitable impacts of climate change, biodiversity, etc.; the EU Directives on Flooding and impacts of climate change, biodiversity, etc.; and the EU Directives on Flooding and the Water Framework Directive which established the concept of river basin management.

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, you 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. Addressing flood risk management through the planning system is a key response and these Guidelines represent an important step in the process of National adaptation to climate change. These Guidelines have statutory force under Section 28 of the Planning and Development Act 2000 (as amended). Local Authorities are requested to take full account of the recommended flood risk identification, assessment and management process, when preparing or varying development plans and local area plans, and in regard to applications for planning permission. Certain areas of the Clare County Development Plan 2017-2023 area are susceptible to flooding therefore it is acknowledged that the objectives of the Clare County Development Plan 2017-2023 be consistent with the Guidelines.

4.6 Air and Climatic Factors

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 Clare County Development Plan 2017-2023 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 Clare County Development Plan 2017-2023 are broadly consistent with this Framework.

Climate Action and Low Carbon Development Bill 2015

The purpose of the Bill is to provide for the approval of plans by the Government in relation to climate change for the purpose of pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy by the year 2050. Low Carbon Transition provides for the making, by the Minister for the Environment, Community and Local Government, and submission to the Government for approval of;

- a National Low Carbon Transition and Mitigation Plan
- a National Climate Change Adaptation Framework

National Mitigation Plan

In anticipation of enactment of the Climate Action and Low Carbon Development Bill, the Department of the Environment, Community and Local Government (DECLG), in conjunction with Departments with responsibility for key sectors, is currently preparing the National Mitigation Plan (NMP), a national plan setting out Ireland's first statutory low carbon development strategy for the period to 2050. It is being developed for the purpose of enabling the State to pursue, and achieve, the transition to a low carbon, climate resilient and environmentally sustainable economy by the year 2050. The primary objective of which will be to track implementation of measures already underway and identify additional measures in the longer term to reduce greenhouse gas emissions and progress the overall national low carbon transition agenda to 2050. The first iteration of the National Mitigation Plan will place particular focus on putting the necessary measures in place to address the challenge to 2020 but also in terms of planning ahead to ensure that appropriate policies and measures will be in place beyond that.

The Plan will incorporate sectoral mitigation measures to reduce greenhouse gases, to be adopted by relevant Ministers with responsibility for key sectors, including agriculture, transport, energy and the built environment.

Air Pollution Act (1987)

In accordance with the Air Pollution Act 1987, local authorities are obliged to take whatever measures they consider necessary to prevent or limit air pollution in their area and the owners of certain industrial plants must obtain an air pollution licence from their Local Authority or the Environmental Protection Agency in order to operate certain industries that will be responsible for emissions.

4.7 Material Assets

Urban Waste Water Treatment Directive (91/271/EEC)

The treatment of wastewater is governed by the Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC) was transposed into Irish law by the Urban Waste

Water Treatment Regulations 2001 (S.I. 254 of 2001). The Directive aims to protect the environment from the adverse effects of the wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. Also the treatment of waste water is relevant to the Water Framework Directive which requires all public bodies, including Clare County Council, to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and bring polluted water bodies up to good status by 2015.

Southern Region Waste Management Plan 2015-2021

In 2012, the Government's blueprint for a circular waste economy, as set out in *A Resource Opportunity – waste management Policy in Ireland*, established a new framework for the provision of effective and efficient waste management services through the establishment of three new waste management planning regions. The Southern Region (SR), serving a population of 1,541,439 includes the administrative area of County Clare. The **EU Waste Framework Directive (WFD)**, published in 2008, has resulted in revisions to the waste hierarchy, the principles of proximity and self-reliance and waste treatment definitions. The Directive places a greater emphasis on optimizing resource efficiency, prevention, reuse and the recovery of missed residual wastes. There are important changes which have been addressed in the preparation of the SR Waste Management Plan. The strategic vision of the SR Plan is to rethink our approach to managing waste, by viewing our waste stream as valuable material resources. Making better use of our resources and reducing the leakage of materials, as wastes from our economies will deliver benefits economically and environmentally to the region. The key plan targets include;

- 1% Reduction per annum in the quantity of household waste generated per capita over the period of the plan
- Achieve a recycling rate of 50% of managed municipal waste by 2020
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices



National Renewable Energy Action Plan, (NREAP) 2010

Submitted under Article 4 of Directive 2009/28/EC this plan sets out Ireland's renewable energy targets to be achieved by 2020. Ireland's overall target is to achieve 16% of energy from renewable sources by 2020. Member states are to achieve their individual target across the heat, transport and electricity sectors and apart from a sub-target of a minimum of 10% in the transport sector that

applies to all Member States, there is flexibility for each country to choose how to achieve their individual target across the sectors.

Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure (2012)

Government policy statement in relation to the transmission network and support need for sufficient infrastructure aligned with proper planning and consultation.

Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework, 2007 – 2020 (White Paper)

The White Paper sets out the Government's Energy Policy Framework 2007-2020 to deliver a sustainable energy future for Ireland. It is set firmly in the global and European context which has put energy security and climate change among the most urgent international challenges. The White Paper sets out the actions to be taken in response to the energy challenges facing Ireland. The objective is to deliver a sustainable energy future, starting now, with a time horizon of 2020 but also looking beyond that.

Offshore Renewable Energy Development Plan (OREDPP) 2030

The OREDPP identifies the opportunity for the sustainable development of Ireland's abundant offshore renewable energy resources for increasing indigenous production of renewable electricity, thereby contributing to reductions in our greenhouse gas emissions, improving the security of our energy supply and creating jobs in the green economy. The OREDPP sets out key principles, policy actions and enablers for delivery of Ireland's significant potential in this area. In this way, the OREDPP provides a framework for the sustainable development of Ireland's offshore renewable energy resources.

Wind Energy Developments and Natura 2000 sites 2011

European Commission Guidance Document on wind energy developments and Natura 2000 sites. Provides guidance on how best to deliver wind energy developments that are compatible with requirement of the Habitats and Birds Directives.

Clare Wind Energy Strategy, 2011-2017

The Clare Wind Energy Strategy was prepared to reflect the changing economic environment and to respond to anticipated commercial demands for wind energy developments. 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 strategy forms a separate volume of the Clare County Development Plan 2017-2023, volume 5 and was adopted by means of a variation into the 2011 – 2017 Plan. The objectives of the Clare County Development Plan 2017 – 2023 are consistent with the Clare Wind Energy Strategy.

Local Authority Renewable Energy Strategies (LARES) – Sustainable Energy Authority of Ireland (2013)

A methodology to assist local authorities in preparing their Renewable Energy Strategy. This methodology aims to facilitate consistency of approach in the preparation of LARES, and to assist local authorities in developing robust, co-ordinated and sustainable strategies in accordance with national and European obligations.

Clare Renewable Energy Strategy 2014-2020

The Renewable Energy Strategy forms part of the Clare County Development Plan 2017-2023 as a separate Volume 6. It sets out the renewable energy resource targets for County Clare up to 2020. It outlines the potential for a range of renewable resources, including Bioenergy (Biomass) and Anaerobic Digestion, Micro Renewables, Geothermal & Ground Source Heat Pump, Solar, Onshore Wind, Marine Renewables (Wave and Tidal Energy), Pumped Hydro Energy Storage and Micro Hydroelectric Power. It acknowledges the significant contribution such renewables can make to County Clare, becoming more energy secure and less reliant on traditional fossil fuels, thus enabling future energy export and meeting assigned targets.

Renewable Electricity Policy and Development Framework

To ensure Ireland meets its future needs for renewable electricity in a sustainable manner, the Minister has decided to formulate the Renewable Electricity Policy and Development Framework. This framework will guide the development of renewable electricity projects which are key objectives of Irish energy policy. The Draft Strategic Environmental Assessment Scoping Report for a Renewable Electricity Policy and Development Framework was published in 2016 and invited submissions on the draft scoping report. In 2012, the Department of Communications, Energy and Natural Resources (now the Department of Communications, Climate Action and Environment) published the Strategy for Renewable Energy, 2012-2020. This Strategy reiterates the Government's firm view that: "...the development and deployment of Ireland's abundant indigenous renewable energy resources, both onshore and offshore, clearly stands on its own merits in terms of the contribution to the economy, to the growth and jobs agenda, to environmental sustainability and to diversity of energy supply." The reduction of greenhouse gas emissions, to combat climate change, and of carbon fuel imports, to safeguard security of energy supply, are among the principal objectives of energy policy in Ireland. To meet these linked objectives will require further significant development of our renewable energy resources. To assist in the sustainable development of these energy resources, the Minister for Communications, Energy and Natural Resources has decided to formulate a Renewable Electricity Policy and Development Framework (with a spatial dimension), to guide the development of renewable electricity projects of large scale on land. Under the 2009 Renewable Energy Directive, EU Directive 2009/28/EC: On the promotion of the use of energy from renewable resources, Ireland is committed to produce at least 16% of all energy consumed by 2020 from renewable sources. This will be met by 40% from renewable electricity, 12% from renewable heat, and 10% from renewable transport. The EU has recently adopted a target for the year 2030 of at least 27% renewable energy. This target is binding at EU level. In Ireland, by 2013, 7.8% of gross final energy use came from renewable sources, with renewable electricity accounting for 20.9% of all electricity generated. To ensure that Ireland meets its future needs for renewable electricity, in a sustainable manner, compatible with environmental and cultural heritage, landscape and amenity considerations, the Minister has decided to formulate the Renewable Electricity Policy and Development Framework. It will contribute toward meeting Ireland's future energy needs,

particularly up to 2030 and beyond, as informed by national and European policy, and be reviewed at five-yearly intervals. The Policy and Development Framework will be primarily for the guidance of An Bord Pleanála, planning authorities, other statutory authorities, the general public and persons seeking development consent in relation to large scale projects for the generation of renewable electricity on land. It will set out policy in respect of environmental considerations, community engagement and also in relation to potential, future export of renewable electricity. It will seek to broadly identify suitable areas in the State, where large scale renewable electricity projects can be developed in a sustainable manner. The existing system for planning permission applications to local authorities or An Bord Pleanála will remain unchanged in respect of renewable electricity projects. These will still require planning permission, including environmental impact assessment where appropriate.

Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary

The Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary is an inter-jurisdictional land and marine based framework plan to guide the future development and management of the Shannon Estuary. It was commissioned by Clare County Council, Kerry County Council, Limerick City and County Councils, Shannon Development and the Shannon Foynes Port Company. The implementation of the Plan is being overseen by a multi-agency steering group comprised of the above together with other key stakeholders with an interest in the Estuary.

The SIFP sets out an overall strategy for the proper sustainable growth, development and environmental management of the Shannon Estuary Region for the next 30 years. Within its lifetime, the Plan must be able to respond to changing circumstances at EU, national, regional and local levels within policy and governance, as well as contextual changes within the Estuary region, including population, lifestyles and aspirations for the future.

Design Manual for Urban roads 2013

This Manual offers a holistic approach to the design of urban streets in cities, towns, suburbs and villages in Ireland for the first time and promotes a collaborative and consultative design process. It requires professionals of different disciplines to work together to achieve better street design.

4.8 Cultural Heritage

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.

Planning authorities are empowered to protect the architectural heritage, in the interest of the proper planning and sustainable development within their respective functional areas, and to prevent its deterioration, loss or damage. This will be reflected in the adoption of suitable policies for protecting the architectural heritage in their development plans and giving practical effect to them through their development control decisions, generally by liaison between planning officers and conservation officers. The objectives of the Clare County Development Plan 2017-2023 are broadly consistent with the Guidelines.

National Heritage Plan (2002-2006)

The core objective is to protect and enhance Ireland's heritage. The Plan sets out archaeological policies and principles that should be applied by all bodies when undertaking a development. An aim of this National Plan is to enhance the role of Local Authorities in heritage protection and management. The objectives of the Clare County Development Plan 2017-2023 are broadly consistent with this Plan.

Record of Monuments and Places, County Clare, 1996

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. There are more than 120,000 monuments on the Record of Monuments and Places for Ireland. The most up to date records can be found on the National Monuments web-site which can be accessed through the following link; <http://webgis.archaeology.ie/nationalmonuments/flexviewer/>

There are approximately 7,000 identified monuments in County Clare. There are 37 monument sites in County Clare which are managed by the National Monument Service (OPW). The County Clare Inventory of Archaeology is ongoing. County Clare is recognised nationally for its archaeological significance, with many large and well-recognised sites. The County Council's objectives with regard to the Record of Monuments and Places for County Clare are reflected in the 2017- 2023.

The Heritage Plan for County Clare, 2011-2017

The Clare Heritage Plan sets out how Clare County Council, in association with other stakeholders, will identify, manage and conserve heritage for the benefit of all. The Clare Heritage Plan will collect and make available heritage information and raise awareness through education initiatives, surveys and research. It will inform public policy on heritage and support the strategic and integrated management of heritage at a local level. The Clare County Development Plan 2017-2023 was prepared in accordance with the Clare Heritage Plan which was formally adopted in May 2011.

4.9 Landscape

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.

Draft Landscape Strategy for Ireland 2014-2024

The Draft National Landscape Strategy for Ireland 2014-2024 (July 2014) seeks to provide a framework for the protection of the many cultural, social, economic and environmental values embedded in the landscape and the relevant elements of the strategy will be integrated as appropriate into the Plan upon its adoption. The Strategy will be subject to screening for Strategic Environmental Assessment (SEA) and Appropriate Screening (AA) as required.

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 geomorphological history. Furthermore, the value of the landscape is assessed in terms of historical, cultural, religious and other understandings of the landscape. The benefit of Landscape Character Assessment is that it allows for a proactive approach to landscape management. It aids the development management process as it indicates development types that would suit certain locations using certain design criteria, which then result in the character of the landscape remaining intact.

Clare Landscape Character Assessment 2003

The objective of the Clare Landscape Character Assessment is to analyse the character, value and sensitivity of County Clare, and provide a baseline against which change to the landscape can be gauged and monitored. The Landscape Character Assessment is from the viewpoint of the natural environment, its social perspective and its management. For this study the landscape of County Clare was recorded and categorised, with reference to settlement patterns, ecology, archaeology and geology, all of which were contributing factors to its evolution over time. The identification of seascape character areas was also undertaken. Consultation with the public provided a further layer of information to the landscape characterisation. In the assessment report the county is divided up into the various landscape characterisation types. The report details each landscape character type and habitat type in the county, along with the ‘forces for change’ that affect the landscape / habitat. Finally the forces for change and trends that will impact the landscape are identified, as well as guidance on how change can be managed ‘to ensure it has a positive, *sustainable influence on landscape character*’.

4.10 SEA Recommendation*

*Refer to Chapter 11 for full details on recommendations

SEA Recommendation	Inclusion in the Plan
The Plan should be set in the context of the planning hierarchy and a clear statement should be provided as to the function of the Plan and what the Plan can and cannot do.	Yes.
Where other Plans/Programmes/Strategies are responsible for implementing relevant policies / objectives / initiatives, these should be acknowledged and fully referenced in the Plan.	Yes.
Under the EIA and Planning and Development Regulations certain projects that may arise during the implementation of the Plan may require an Environmental Impact Assessment. There are also requirements with regard to EIA for sub-threshold development.	Yes
Projects would also be required to be screened with respect to the requirement for Appropriate Assessment as required by Article 6 of the Habitats Directive.	Yes.
<p>Take account of:</p> <ul style="list-style-type: none"> Delivering a Sustainable Energy Future for Ireland – the Energy Policy Framework 2007-2020 White Paper National Climate Change Strategy (NCCS) 2007-2012 National Renewable Energy Action Plan Wind Energy Strategy, Volume 5 – Clare County Development Plan 2017-2023 Renewable Energy Strategy, Volume 6 - Clare County Development Plan 2017-2013 Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary, Volume 7 of the Clare County Development Plan 2017 - 2023 	<p>It is an objective of the Plan to achieve a low carbon county and to establish a low carbon economy,</p> <p>It is an objective in the Plan support the implementation of the Limerick Clare Climate Change Strategy 2010, to facilitate measures which seek to reduce emissions of greenhouse gases and to adopt sustainable planning strategies,</p> <p>It is a goal in the Plan to achieve a County that is resilient to climate change and that facilitates a low carbon future.</p> <p>Referenced in Section 10.4.4 of the Plan</p> <p>Referenced in Sections 10.4.3 of the Plan</p> <p>This is referenced in Chapter 11 of the Plan.</p>

<ul style="list-style-type: none"> • Framework and Principles for the Protection of the Archaeological Heritage • Floods Directive and associated CFRAM Studies • Water Framework Directive and associated Shannon and Western (International) River Basin Management Plans 	<p>Section 15.4 of the Plan recognises the value and significance of archaeological heritage.</p> <p>Referenced in Objective 18.6 of the Plan.</p> <p>Referenced in Objective 8.23 of the Plan</p>
--	--

Chapter Five - Environmental Baseline

5.1 Introduction

This Chapter describes the environmental baseline for the development plan area. The baseline information presents the environmental context within which the Clare County Development Plan 2017-2023 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 and Quality of Life
- Soil and Geology
- Air and Climate
- Water
- Material Assets
- Cultural Heritage
- Landscape

The inter-relationship between the environmental parameters will also be considered within this section.

5.2 Purpose of Environmental Baseline

The purpose of presenting the environmental baseline as part of the SEA process as set out in this section is to:

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

5.3 Environmental Inter-relationships

Recognising the inter-relationship between the different environmental parameters is critical in understanding an assessment of potential significant effects on the environment as the consequences of the proposals and objectives set out in the Clare County Development Plan 2017-2023. Under each parameter, the inter-relationship with all other environmental parameters is set out.

5.4 SEA Recommendations

As part of the iterative process of SEA in the Plan making process, the presentation of baseline information, which will be used in the assessment of environmental effects of the policies and objectives of the Plan, does in itself highlight information and issues which should be incorporated within the Plan and where these arise, a recommendation(s) will be included at the end of the

baseline section for each environmental parameter in this regard. Full details on the SEA recommendations are outlined in Chapter 11 of the Environment Report.

5.5 Current State of the Environment

The EPA's fifth "Ireland's Environment Report" (2012) identified four priority challenges for the environment, which, if addressed successfully, should benefit the present and future quality of Ireland's environment. These challenges include:

- Valuing and protecting our natural environment;
- Building a Resource efficient, Low-Carbon Economy;
- Implementing Environmental Legislation; and
- Putting the Environment at the centre of our Decision Making

The Clare County Development Plan 2017-2023 needs to face these challenges by developing its plan and land-use zoning objectives which ensure sufficient natural environmental protection, promote measures to reduce climate change, for example through sustainable development, renewable energy and waste reduction, as well as not to contribute further to climate change through the implementation of plan objectives and land-use zoning away from areas vulnerable to climate change (e.g. flood prone areas). This needs to be achieved through plan objectives which consider the legislative requirements at a local and national level, whilst ensuring that the environment is central to all decision making.

5.6 Biodiversity, Flora and Fauna

5.6.1 Introduction

‘Biological diversity’ or biodiversity, means “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (The United Nations Convention on Biodiversity, 1992).

In general terms biodiversity refers to:

- Different **habitats** such as woodlands, wetlands, grasslands and estuarine habitats and the range of flora and fauna species they support.
- Different **species** such as plants, mammals, birds, insects, fish, microbes, mosses and fungi, and their inter-relationships such as food chains and cohabitation.
- **Genetic diversity** within species which is vital for healthy populations of individual species to survive.
- **Ecosystems diversity** which are the relationships between different species, their habitats and their local, non-living environment (geology, hydrology and microclimate).
- Features of the **landscape**, which by virtue of their linear and continuous structure (such as hedgerows or streams) or their function as links (such as ponds or small woods) are essential for the migration, dispersal and genetic exchange of wild species.
- Flora and Fauna are the plant and animal life, respectively.

A wide range of economic and social benefits and services result from the protection of biodiversity, for example, it forms the basis of our landscapes, provides for food and clean water supplies, opportunities for waste disposal, nutrient recycling, flood storage and regulation, amenity and recreational opportunities through development of green infrastructure networks.

5.6.2 Key Legislation

EU Habitats Directive (92/43/EEC)

The Habitats Directive provides the legislative framework for the protection of habitats and species throughout Europe through the establishment of a network of designated conservation areas known as the Natura 2000 network. The Natura 2000 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 (now called Codified Directive 2009/147/EC).

There are 24 Articles contained within the Habitats Directive. Article 6 is viewed to be one of the most important of the 24 as it determines the link between land use and conservation. It contains three main sets of provisions. In summary, Article 6(1) sets out measurements that are necessary for conservation with a focus on both positive and practical interventions. Article 6(2) places emphasis on prevention, setting out that habitat deterioration and species disturbance should be avoided.

Articles 6(3) and 6(4) set out a series of procedural safeguards presiding over plans and projects that are likely to have a significant effect on an identified European site(s).

Article 10¹ of the Directive covers stepping stones and ecological corridors including nature conservation sites, other than European site(s), habitat areas and species locations including areas of ecological importance identified through habitat surveys.

EU Birds Directive (now called Codified Directive 2009/147/EC)

The Birds Directive was anticipated by the Wildlife Act (1976) and its provisions covered many of the requirements of the Birds Directive. Article 7 of the Habitats Directive makes the provisions of Article 6(3) and 6(4) applicable to Special Protection Areas.

The Birds Directive requires that important concentrations of migratory waterfowl and internationally important wetlands be protected in the same way as Annex 1 and Annex II habitats and species under the Habitats Directive. In addition, case law under the Birds Directive indicates that internationally important bird sites are given protection equivalent to priority listed habitats and species under the Habitats Directive.

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 Directive defines "environmental damage" as damage to protected species and natural habitats, damage to water and damage to soil. Operators carrying out dangerous activities listed in Annex III of the Directive fall under strict liability (no need to prove fault). Operators carrying out other occupational activities than those listed in Annex III are liable for fault-based damage to protected species or natural habitats. The establishment of a causal link between the activity and the damage is always required. Affected natural or legal persons and environmental NGOs have the right to request the competent authority to take remedial action if they deem it necessary.

European Communities (Environmental Liability) Regulations 2008

The European Communities (Environmental Liability) Regulations 2008, came into force in Ireland on 1st April 2009. These Regulations (SI 547 of 2008) transpose EU Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage. The purpose of these Regulations is to establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage. The EPA is designated as the competent authority for all aspects of these Regulations.

Wildlife Act 1976 and Wildlife (Amendment) Act 2000

The Wildlife (amendment) Act, 2000 protects species at the national level which is implemented through a series of regulations. Its main objectives inter alia are to:

¹ Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies and, in particular with a view to improving the ecological coherence of the Natura 2000 network, to encourage the management of features of the landscape which are of major importance for wild fauna and flora.

- Provide a mechanism to give statutory protection to Natural Heritage Areas (NHAs)
- Provide for statutory protection for important geological and geomorphological sites, including fossil sites by designation as NHAs
- Improve some existing measures and introduce new ones, to enhance the conservation of wildlife species and their habitats
- Broaden the scope of the Wildlife Acts to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act
- Increase substantially the level of fines for contravention of the Wildlife Acts and to allow for the imposition of prison sentences
- Strengthen the provisions relating to the cutting of hedgerows during the critical bird-nesting period and include a requirement that hedgerows may only be cut during that period by public bodies, including local authorities, for reasons of public health or safety
- Strengthen the protective regime for Special Areas of Conservation (SACs) by removing any doubt that protection will in all cases apply from the time of notification of proposed sites.

Actions for Biodiversity 2011-2016: Ireland's National Biodiversity Plan

The National Biodiversity Plan sets out a vision and strategic objectives for the conservation of Ireland's biodiversity. The vision for Ireland's biodiversity is *'that biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally'*.

The overarching target of the Plan is *'that biodiversity loss and degradation of ecosystems are reduced by 2016 and progress is made towards substantial recovery by 2020'*. There are seven strategic objectives as set out below.

- To mainstream biodiversity in the decision making process across all sectors; To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity
- To increase awareness and appreciation of biodiversity and ecosystems services
- To conserve and restore biodiversity and ecosystem services in the wider countryside
- To conserve and restore biodiversity and ecosystem services in the marine environment;
- To expand and improve on the management of protected areas and legally protected species;
- To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services.

Clare Biodiversity Action Plan 2014-2017

The main aim of the Clare Biodiversity Action Plan is to *'conserve the biodiversity of County Clare'*. This will be achieved by raising awareness of County Clare's biodiversity, co-ordinating a targeted biodiversity education programme for all ages and abilities, recording the biodiversity of County Clare, the production of best practice guidance for biodiversity management and conservation, and supporting individuals and organisations working towards biodiversity conservation in County Clare.

Similar to the objectives of the National Biodiversity Plan, the Clare Biodiversity Action Plan 2014-2017 is consistent with the 'ecosystem approach'. The ecosystem approach ensures that all of the essential processes, functions and interactions between species, their habitats and their local, non-living environment have been taken into account when promoting best practice management and guidelines for biodiversity conservation.

County Clare Heritage Plan 2011-2017

The County Clare Heritage Plan identifies heritage as landscape, seascapes, flora, fauna, wildlife habitats, monuments, archaeological objects, architectural heritage, heritage objects, geology, inland waterways, heritage gardens and parks, wrecks, and elements of cultural heritage such as genealogy, place names, the Irish language, traditional music and oral history recording.

There are three overall aims:

- Raise Awareness, Appreciation and Enjoyment of our Heritage
- Acquire Knowledge through Survey and Research
- Promote Best Practice in Heritage Conservation and Management.

Of the fourteen objectives set out under these aims, there are four of particular relevance to the natural heritage of County Clare as outlined below:

- To protect wildlife/biodiversity in both designated sites and throughout the countryside
- To identify, protect and enhance the best examples of natural and semi-natural habitats of local importance
- Conserve biodiversity (habitats, species and genetic diversity) of the county
- To promote sustainable recreational use and enjoyment of the countryside, marine and coastal areas in County Clare.

5.6.3 Biodiversity and Climate Change Adaptation

Flood plains and wetland areas are essential for flood control, pollution control, water quality and supply as well as act as vital carbon sinks, along with peatlands and woodlands, which could help address climate change. Changes in precipitation levels, air and soil temperatures, water availability and sea level rise all have implications in terms of effects on biodiversity. The effects will be cumulative, long-term and often complex. The uncertainty that surrounds climate change and what will occur also adds to the complexity and uncertainty of identifying impacts.

Climate change is regarded as the biggest environmental issue facing the world today. The release of greenhouse gases, such as carbon dioxide, is regarded as one of the main drivers of climate change. Biodiversity, and particularly plants, play a significant role in removing this carbon dioxide from the atmosphere and storing it through photosynthesis. However, activities which lead to a loss of vegetation prevent this critical service from occurring, while activities such as the drainage of peatlands can actually release more carbon dioxide into the atmosphere. Combined, these activities can speed up the rate of climate change. The rate of biodiversity loss across the world has been inextricably linked to the rate of global climate change. However, there has been an increasing move towards trying to adapt to climate change, rather than trying to stop it, and in this regard, biodiversity has another significant role to play, particularly in relation to flood attenuation.

Wetlands, such as bogs, fens, swamps and marshes, slow down the flow of water, and so help to regulate flooding, however, their loss not only exacerbates the level of flooding, but also its speed, which leads to flash flooding. Wetlands can contain huge volumes of water (bogs, for example, are made of over ninety percent water) and when a wetland is drained, the water must go somewhere, and water will always flow to the lowest lying areas. The protection and retention of river floodplains from infilling, reclamation or development is also vitally important to ameliorate the impacts of flooding.

5.6.4 Biodiversity in the Plan Area

The Plan area is rich in biodiversity, containing many important, and protected, habitats and species such as the Shannon Estuary, lakes, turloughs, fens, wetlands, woodlands, bats, wildfowl (duck and geese), waders, salmon, lamprey and otters. However, it also contains many other habitats which are not protected such as scrub, parks, streams, hedgerows, tree lines, roadside verges, housing estate open spaces and gardens. It is these locally important habitats and species within the landscape, including extensive areas of wetland, fens, broadleaf woodlands, grasslands and turloughs, which provide links between the more rare and protected habitats, and are essential for the migration, dispersal and genetic exchange of wild plants and animals such as garden birds (robins, wrens, finches, etc.) and migrant summer visitors (swallows, cuckoos, warblers, etc), otters, hedgehogs, bats, pigmy shrew and other Irish mammals, lamprey, salmon and other fish species, and a variety of invertebrates, including beetles, bees, butterflies, dragonflies and damselflies. They also allow for the spread of seeds, which benefit the wildflower populations of County Clare. It is recognised that many rare and protected species are reliant on locally important species, and as such the protection of common habitats and species should not be underestimated.

While not explicitly stated, there is a hierarchy within biodiversity, by virtue of the legislation which protects it. At the top are sites designated (or proposed for designation) for nature conservation under European legislation (SACs, SPAs), followed by those designated (or proposed for designation) by national legislation (NHAs, pNHAs). Next, there are habitats and species outside designated sites which are protected under European legislation, followed by those protected under national legislation. There are locally important areas protected by virtue of their zoning in land use plans, and finally, there is biodiversity which is not directly protected by legislation, for example in proposed Natural Heritage Areas (pNHA).

Within County Clare there are habitats of high biodiversity and conservation value, including the wildlife sanctuary of Mutton Island and the Keelhilla nature reserve. There are a number of designated sites associated within the county which are designated as Ramsar Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs).

Natural Heritage Areas also have a significant role in supporting the species using Natura 2000 sites mainly relating to mobile fauna such as mammals and birds which may use pNHAs and NHAs as “stepping stones” between Natura 2000 sites. Article 10 of the Habitats Directive and the Habitats Regulations 2011, place a high degree of importance on such non-Natura 2000 areas as features that connect the Natura 2000 network. Features such as ponds, woodlands and important hedgerows form key “stepping stones”.

5.6.5 European Sites

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. The Habitats Directive seeks to establish the Natura 2000 network, a network of protected areas (European Sites) throughout the European Union. It is the responsibility of each Member State to designate SACs to protect habitats and species, which, together with Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC), form the Natura 2000 network. The integrity of a European Site (referred to in Article 6.3 of the EU Habitats Directive) is determined based on the conservation status of the qualifying features of the SAC. The qualifying features for the designated sites have been obtained through a review of the Conservation Objectives available from the National Parks and Wildlife Service (NPWS). The SACs and SPAs associated with the Development Plan area are listed in **Table 5.6.1** and **Table 5.6.2** respectively and illustrated in **Figure 5.6.1** and **Figure 5.6.2**.

Table 5.6.1 List of Special Areas of Conservation (SACs) in the Clare County Development Plan Area

Designated SAC	Site Code	Qualifying Interests
Ballyallia Lake SAC	000014	It is a naturally eutrophic lake which is a habitat listed under Annex I of the habitats directive. It also contains significant numbers of the Whooper Swan which is an Annex I species under the Birds Directive.
Ballycullinan Lake SAC	000016	Designated for the presence of <i>Cladium fen</i> , a habitat listed under Annex I of the EU Habitats Directive.
Ballyogan Lough SAC	000019	This site contains the Annex I species <i>Cladium fen</i> .
Black Head – Poulsallagh Complex SAC & pNHA	000020	Designated for the presence of Annex I species such as Reefs, Perennial vegetation of stony banks, Alpine Heaths, <i>Juniperus communis</i> formations on heaths or calcareous grasslands, lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>), Petrifying springs with tufa formation, limestone pavements and submerged or partly submerged sea caves. In addition the site contains the Annex II species such as <i>Petalophyllum ralfsii</i> .
Danes Hole, Poulnalecka SAC	000030	This site is significant as it is a winter hibernation site and a mating site of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>), which is a species listed under Annex II of the EU Habitats Directive.
Dromore Woods and Loughs SAC	000032	This is designated for the presence of several naturally eutrophic lakes with <i>Magnopotamion</i> and <i>Hydrocharition</i> -type vegetation and limestone pavements which are listed under Annex I of the EU Habitats Directive as well as the Otter which is listed under Annex II of the EU Habitats Directive.
Inagh River Estuary SAC & pNHA	000036	Species listed under Annex I of the EU Habitats Directive such as <i>Salicornia</i> and other annuals colonizing mud and sand, Atlantic salt meadows (<i>Glaucopuccinellietalia maritimi</i>), Mediterranean salt meadows (<i>Juncetalia maritimi</i>), shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) and fixed coastal dunes with herbaceous vegetation (grey dunes).
Pouladatig Cave SAC	000037	Designated for the presence of the Lesser Horseshoe Bat (<i>Rhinolophus</i>
Lough Gash Turlough SAC	000051	This site is significant as it is a Turlough habitat under Annex I of the EU Habitats Directive.
Moneen Mountain SAC	000054	Designated for the presence of limestone pavement and its associated calcareous grassland and juniper scrub and heaths which are listed under Annex I of the EU Habitats Directive. The Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) can be found at this site and is listed under

Designated SAC	Site Code	Qualifying Interests
		Annex II of the EU Habitats Directive.
Moyree River System SAC	000057	Limestone pavement, floating river vegetation, alkaline fen and caves are the Annex I Habitats located at this site. It is an internationally important summer roosting and hibernation site for the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive.
Poulmagordon Cave (Quin) SAC	000064	Designated for the presence of a natural cave which is listed under Annex I of the EU Habitats Directive. The Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>), a species listed under Annex II of the Habitats Directive, uses the cave as a hibernation site.
Galway Bay Complex SAC & pNHA	000268	This site has the following significant habitats which are listed under Annex I of the EU Habitats Directive: Mudflats and sandflats not covered by seawater at low tide, coastal lagoons, large shallow inlets and bays, reefs, perennial vegetation of stony banks, <i>Salicornia</i> and other annuals colonizing mud and sand, Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>), Mediterranean Salt Meadows (<i>Juncetalia maritima</i>), Turloughs, <i>Juniperus communis</i> formations on calcareous heaths or grasslands, Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (important orchid sites), Calcareous fens with (<i>Cladium mariscus</i>) and species of the <i>Caricion davallianae</i> and Alkaline fens. The Otter (<i>Lutra lutra</i>) and the Common seal (<i>Phoca vitulina</i>) are the species found at this site which are listed under Annex II of the EU Habitats Directive.
Loughatorick South Bog SAC	000308	Designated for the presence of the Blanket bog (active only) habitat, listed under Annex I of the EU Habitats Directive.
Ballyteige (Clare) SAC	000994	This site consists of Molina meadows on calcareous, peaty or clayey-silt laden soils (<i>Molinia caerulea</i>), a habitat listed under Annex I of the EU Habitats Directive.
Ballyvaughan Turlough SAC	000996	Designated for the presence of Turloughs which are listed under Annex I of the EU Habitats Directive.
Glenomra Wood SAC	001013	This site consists of Old sessile oak woods with Ilex and Blechnum in British Isles, listed under Annex I of the EU Habitats Directive.
Carrowmore Point to Spanish Point and Islands SAC & pNHA	001021	Designated for the presence of the following habitats listed under Annex I of the EU Habitats Directive: Coastal lagoons, Reefs, Perennial vegetation of stony banks and Petrifying springs with tufa formation (<i>Cratoneurion</i>).
Glendree Bog SAC	001912	Designated for the presence of Blanket Bog (active only), a habitat listed under Annex I of the EU Habitats Directive.
East Burren Complex SAC	001926	This site has the following habitats which are listed under Annex I of the EU Habitats Directive: Hard oligo-mesotrophic waters with benthic vegetation of Chara spp., Turloughs, Alpine and Boreal Heaths, <i>Juniperus communis</i> formations on heaths or calcareous grasslands, Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (important orchid sites), lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>), Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> , Petrifying springs with tufa formation (<i>Cratoneurion</i>), Alkaline fens, Limestone pavements, Caves not open to the public, Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno- Padion</i> , <i>Alnion incaeanae</i> , <i>Salicion albae</i>). The Otter (<i>Lutra lutra</i>) is found at this site and is listed under Annex II of the EU Habitats Directive.
Old Domestic Building (Keevagh) SAC	002010	Designated for the presence of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive.
Newhall and		This site is significant as it consists of the habitat Caves not open to

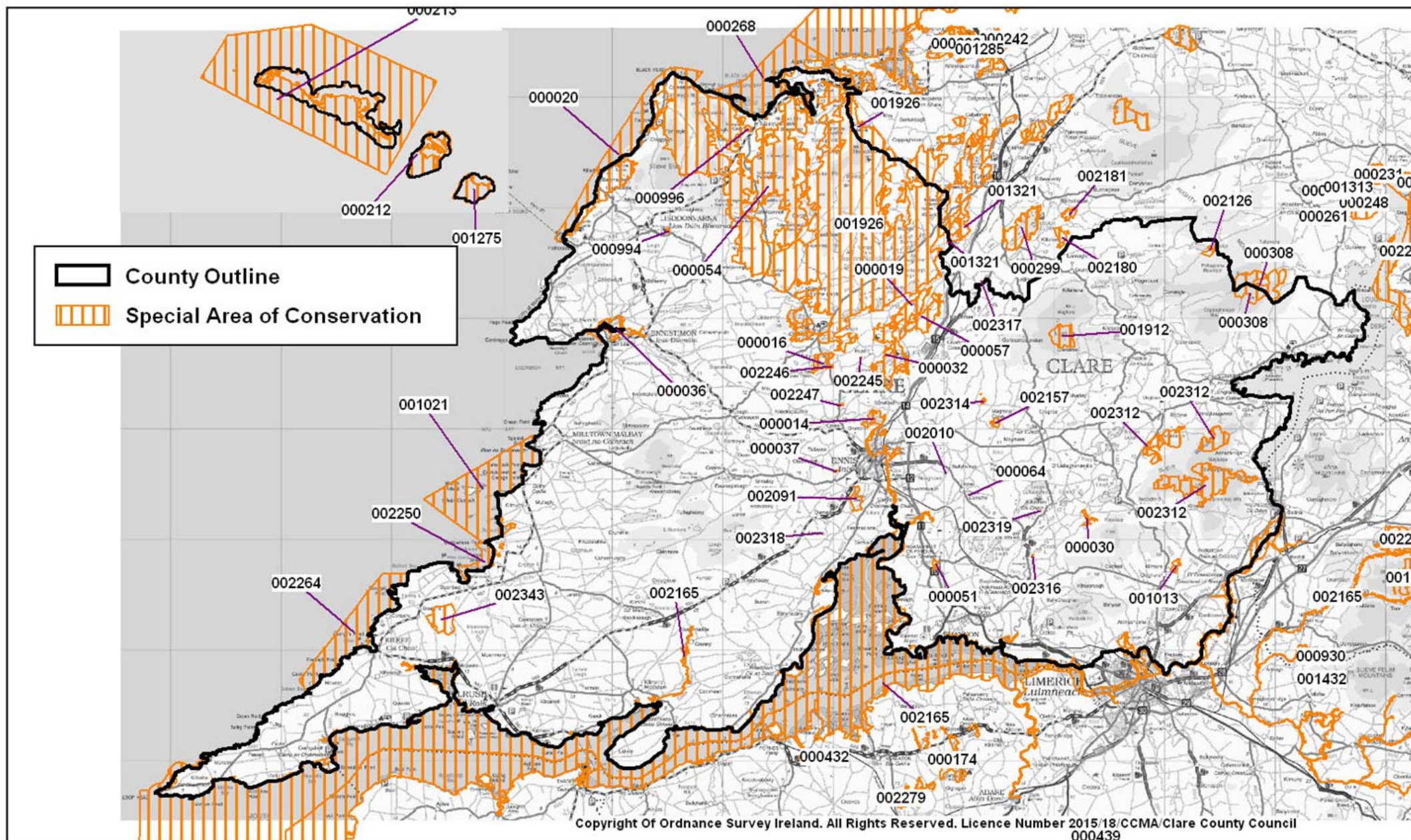
Designated SAC	Site Code	Qualifying Interests
Edenvale Complex SAC	002091	the public which is a habitat listed under Annex I of the EU Habitats Directive. The Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>), an Annex II species can also be found at this location.
Pollagoona Bog SAC	002126	Designated for the presence of Blanket bog (active only) which is a habitat listed under Annex I of the EU Habitats Directive.
Newgrove House SAC	002157	This site is significant as the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive can be found here.
Lower River Shannon SAC	002165	Designated for the presence of the following habitats under Annex I of the EU Habitats Directive: Sandbanks which are slightly covered by sea water all the time, Estuaries, Mudflats and sandflats not covered by seawater at low tide, Coastal lagoons, Large shallow inlets and bays, Reefs, Perennial vegetation of stony banks, Vegetated sea cliffs of the Atlantic and Baltic coasts, <i>Salicornia</i> and other annuals colonizing mud and sand, <i>Spartina</i> swards (<i>Spartinion maritimae</i>), Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>), Mediterranean salt meadows (<i>Juncetalia maritimi</i>), Molina meadows on calcareous, peaty or clayey-silt laden soils (<i>Molinion caeruleae</i>) and Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>). Annex II species which are present at this site include the Freshwater pearl mussel (<i>Margaritifera margaritifera</i>), Sea lamprey (<i>Petromyzon marinus</i>), Brook lamprey (<i>Lampetra planeri</i>), River lamprey (<i>Lampetra fluviatilis</i>), Salmon (<i>Salmo salar</i>), Bottle-nosed dolphin (<i>Tursiops truncatus</i>) and the Otter (<i>Lutra lutra</i>).
Old Farm Buildings, Ballymacrogan SAC	002245	This site is significant as the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive can be found here.
Ballycullinan, Old Domestic Building SAC	002246	Designated for the presence of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive.
Toonagh Estate SAC	002247	This site is significant as the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive can be found here.
Carrowmore Dunes SAC	002250	Designated for the presence of the following habitats listed under Annex I of the EU Habitats Directive: Reefs, Embryonic shifting dunes, Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) and Fixed coastal dunes with herbaceous vegetation (grey dunes). The Annex II species narrow-mouthed whorl snail (<i>Vertigo angustior</i>) can also be located at this site.
Kilkee Reefs SAC	002264	This site is significant as it consists of a Reef habitat and a shallow bay habitat which is both listed under Annex I of the EU Habitats Directive.
Slieve Bernagh Bog SAC	002312	Designated for the presence of blanket bog, wet heath and dry heath which are habitats that are listed under Annex I of the EU Habitats Directive.
Old Domestic Buildings, Rylane SAC	002314	This site contains two important breeding roosts of the lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the Habitats Directive.
Ratty River Cave SAC	002316	Designated for the presence of a cave which is listed under Annex I of the EU Habitats Directive and it is a significant winter roost and a breeding site of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive.
Cregg House Stables, Crusheen	002317	This site contains an important breeding roost of the lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the Habitats Directive.

Designated SAC	Site Code	Qualifying Interests
Knockanira House SAC	002318	This site is significant as it contains an important maternity roost of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the EU Habitats Directive.
Kilkishen House SAC	002319	Designated for the presence of an important winter roost of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) which is listed under Annex II of the Habitats Directive.
Tullaheer Lough and Bog SAC	002343	Significant site as it consist of an active raised bog, degraded raised bog and Rhynchosporion and transition mire which are listed on Annex I of the EU Habitats Directive.

Table 5.6.2 List of Special Protection Areas (SPAs) in the Clare County Development Plan Area

Designated SPA	Site Code	Reason for Designation
Cliffs of Moher SPA	004005	This site is significant for the presence of the Breeding Peregrine (<i>Falco peregrinus</i>) and the Chough (<i>Pyrrhocorax pyrrhocorax</i>) which are listed under Annex I of the EU Birds Directive. It is also designated for the presence of Fulmar (<i>Fulmarus glacialis</i>), Kittiwake (<i>Rissa tridactyla</i>), Guillemot (<i>Uria aalge</i>), Razorbill (<i>Alca torda</i>), and Puffin (<i>Fratercula arctica</i>). This site has the largest Kittiwake (<i>Rissa tridactyla</i>) and Razorbill (<i>Alca torda</i>) colonies in Ireland.
Inner Galway Bay SPA & Ramsar Site	004031	Designated for the presence of the following species which are listed under Annex I of the EU Birds Directive: Red-throated Diver (<i>Gavia stellata</i>), Black-throated Diver (<i>Gavia artica</i>), Great Northern Diver (<i>Gavia immer</i>), Golden Plover (<i>Pluvialis apricaria</i>), Bar-tailed Godwit (<i>Limosa ponica</i>), Sandwich Tern (<i>Sterna sandvicensis</i>) and Common Tern (<i>Sterna hirundo</i>). Also found at this site are the Cormorant (<i>Phalacrocorax carbo</i>), Grey Heron (<i>Ardea cinerea</i>), Light-Bellied Brent Goose (<i>Branta bernicla hrota</i>), Wigeon (<i>Anas Penelope</i>), Teal (<i>Anas crecca</i>), Shoveler (<i>Anas clypeata</i>), Red-Breasted Merganser (<i>Mergus serrator</i>), Ringed Plover (<i>Charadrius hiaticula</i>), Golden Plover (<i>Pluvialis apricaria</i>), Northern Lapwing (<i>Vanellus vanellus</i>), Dunlin (<i>Calidris alpina</i>), Curlew (<i>Numenius arquata</i>), Redshank (<i>Tringa tetanus</i>), Turnstone (<i>Arenaria interpres</i>), Black-headed Gull (<i>Chroicocephalus ridibundus</i>) and the Common Gull (<i>Larus canus</i>).
Ballyallia Lake Wildfowl Sanctuary SPA	004041	This site is significant as the Whooper Swan (<i>Cygnus Cygnus</i>), a species listed under Annex I of the EU Birds Directive can be located here. In addition, the Shoveler (<i>Anas</i>) population is the largest in Ireland and the Gadwall (<i>Anas strepera</i>) population is also highly significant.
Lough Derg (Shannon) SPA	004058	Designated for the presence of the Common Tern (<i>Sterna hirundo</i>), Whooper Swan (<i>Cygnus Cygnus</i>) and the Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) which are listed under Annex I of the EU Birds Directive. The site also has nationally breeding populations of Cormorant (<i>Phalacrocorax carbo</i>) and specifically during winter there are significant populations of Tufted Duck (<i>Aythya fuligula</i>) and Goldeneye (<i>Bucephala clangula</i>).
River Shannon and River Fergus Estuaries SPA	004077	The following species listed under Annex I of the EU Birds Directive can be found at this site: Whooper Swan (<i>Cygnus Cygnus</i>), Golden Plover (<i>Pluvialis apricaria</i>) and the Bar-tailed Godwit (<i>Limosa lapponica</i>). In addition, it has internationally important populations of Dunlin (<i>Calidris alpina</i>), Black-tailed Godwit (<i>Limosa limosa</i>) and Redshank (<i>Tringa totanus</i>). In addition, the following species can also be found at this location: Cormorant (<i>Phalacrocorax carbo</i>), Light-

Designated SPA	Site Code	Reason for Designation
		bellied Brent Goose (<i>Branta bernicla hrota</i>), Shelduck (<i>Tadorna tadorna</i>), Wigeon (<i>Anas penelope</i>), Teal (<i>Anas crecca</i>), Pintail (<i>Anas acuta</i>), Shoveler (<i>Anas clypeata</i>), Scaup (<i>Aythya marila</i>), Ringed Plover (<i>Charadrius hiaticula</i>), Grey Plover (<i>Pluvialis squatarola</i>), Northern Lapwing (<i>Vanellus vanellus</i>), Knot (<i>Calidris canutus</i>), Curlew (<i>Numenius arquata</i>), Greenshank (<i>Tringa nebularia</i>) and the Black-headed Gull (<i>Chroicocephalus ridibundus</i>).
Illaunonearaun SPA	004114	Designated for the presence of the Barnacle Goose (<i>Branta leucopsis</i>), a species listed under Annex I of the EU Birds Directive. The population of Barnacle Geese at this site often exceeds the qualifying threshold for National Importance.
Loop Head SPA	004119	This site is significant for the presence of breeding Chough (<i>Pyrrhocorax pyrrhocorax</i>) and Peregrine (<i>Falco peregrinus</i>), species listed under Annex I of the EU Birds Directive. The site also has populations of Kittiwake (<i>Rissa tridactyla</i>) and Guillemot (<i>Uria aalge</i>) which are of National Importance.
Slieve Aughty Mountains SPA	004168	Designated for the presence of the Hen Harrier (<i>Circus cyaneus</i>), a species listed under Annex I of the EU Birds Directive. This is the second largest concentration for this species in Ireland. Another Annex I species, Merlin (<i>Falco columbarius</i>) can be found at this site.
Mid – Clare Coast SPA	004182	Significant species at this site include the Barnacle Goose (<i>Branta leucopsis</i>), Storm Petrel (<i>Hydrobates pelagicus</i>), Golden Plover (<i>Pluvialis apricaria</i>), Great Northern Diver (<i>Gavia immer</i>), and Red-throated Diver (<i>Gavia stellata</i>) which are listed under Annex I of the EU Birds Directive. It has a nationally important breeding colony of Cormorant (<i>Phalacrocorax carbo</i>) during the summer. It is also an important site for the presence of Ringed Plover (<i>Charadrius hiaticula</i>), Sanderling,
Corofin Wetlands SPA	004220	Designated for the presence of the Whooper Swan (<i>Cygnus Cygnus</i>) and the Golden Plover (<i>Pluvialis apricaria</i>) were are listed under Annex I of the EU Birds Directive. In addition, the site supports nationally important populations of Little Grebe (<i>Tachybaptus ruficollis</i>), Wigeon (<i>Anas penelope</i>), Teal (<i>Anas crecca</i>) and the Black-tailed Godwit (<i>Limosa limosa</i>).



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.1 Special Areas Of Conservation

SCALE: NOT TO SCALE

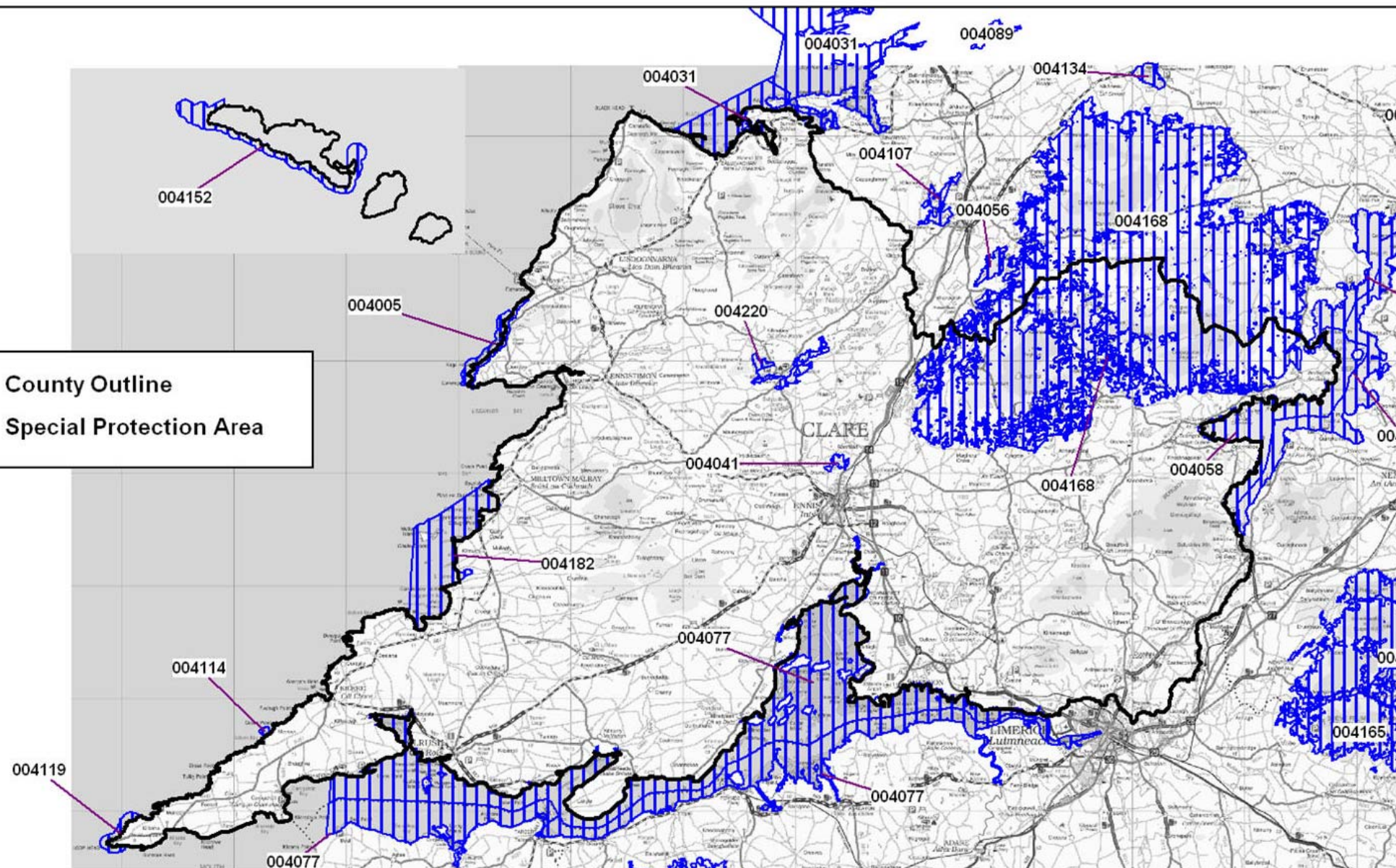
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.2 Special Protection Areas

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

A full assessment of the Plan against the qualifying interests and conservation objectives of the designated sites is undertaken throughout the appropriate assessment process which has been undertaken in conjunction with the Plan and SEA processes and is presented in the Natura Impact Report (See Volume 10a)

5.6.6 Proposed Natural Heritage Areas

Under the Wildlife Amendment Act (2000), Natural Heritage Areas are legally protected from damage from the date they are formally proposed for designation. The aim of the NHA network is to conserve and protect nationally important plant and animal species and their habitats. They are also designated to conserve and protect nationally important landforms, geological or geomorphological features. Planning authorities are obliged by law to ensure that these sites are protected and conserved. NHAs and pNHAs, although not part of the European network, often provide an important supporting role to it. Therefore in order to protect the European network it may be important to protect the NHA/pNHA. Article 10 of the Habitats Directive together with the Habitats Regulations 2011; place a high degree of importance on these sites as features that connect European sites. There are 14 NHAs and 61 pNHAs within and adjacent to the Development Plan area and are listed in **Tables 5.6.3** and **5.6.4** and shown in **Figure 5.6.3**.

Table 5.6.3 List of Natural Heritage Areas (NHA) in the Clare County Development Plan Area

Designated NHA	Site Code	Reasons for Designation
Doon Lough Bog NHA	000337	This site consists of raised bog which is a rare habitat within the EU. This NHA is of significant importance due to its location. It is one of the most westerly raised bogs in Ireland.
Ayle Lower Bog NHA	000993	A raised bog which is a rare habitat within the EU can be found at this location This NHA is of significant importance due to its location. It is one of the most westerly raised bogs in Ireland and it seems to have semi-natural margins along the stream that flows through it.
Illeunonearaun NHA	001014	No description available.
Loughanilloon Bog NHA	001020	This site consists of raised bog which is a rare habitat within the EU. It supports a range of microhabitats, including hummocks and a flush. The diversity of the site is enhanced by the presence of a lake.
Slieve Aughty Bog NHA	001229	Supports a significant area of upland blanket bog, a globally scarce resource.
Cloonloun More Bog NHA	002307	A raised bog which is a rare habitat within the EU can be found at this location This NHA is of significant importance due to its location as it is one of the few remaining raised bogs in the County.
Lough Naminna Bog NHA	002367	This site is of significant conservation interest as it consists of an upland blanket bog. It is a globally scarce resource.
Lough Atorick District Bogs NHA	002377	Designated for the presence of upland blanket bog with intermediary characteristics between blanket and raised bog types.
Slievecallan Mountain Bog NHA	002397	This site contains an upland blanket bog and is one of the few intact areas of blanket bog in the County. A diverse range of flora and fauna can be found at this location.
Cragnashingaun Bogs NHA	002400	It consists of both upland and lowland blanket bog. A diversity of flora and fauna can be found within a range of blanket bog microhabitats at this location.
Gortacullin Bog NHA	002401	Designated for the presence of upland blanket bog and wet heath. A range of blanket bog microhabitats such as hummock/ hollow complexes, flushes and regenerating cutover with willow and birch scrub

Designated NHA	Site Code	Reasons for Designation
		can be found here.
Woodcock Hill Bog NHA	002402	This site consists of upland blanket bog which is a globally scarce resource. Wet heath can also be found here.
Lough Acrow Bogs NHA	002421	Designated for the presence of upland blanket bog. A range of microhabitats can be found here including a deep, wet bog associated with a well-developed pool complex.
Oysterman's Marsh NHA	002439	This site contains a significant area of lowland blanket bog, a globally scarce resource.
Maghera Mountain Bogs NHA	002442	Consists of a diversity of habitats such as, heath, flush, scrub and upland blanket bog which is the dominant habitat.

Table 5.6.4 List of Proposed Natural Heritage Areas (pNHA) in the Clare County Development Plan Area

Proposed Natural Heritage Area	Site Code	Reason for Designation
Lough Derg pNHA	000011	Description of pNHA not available, see Lough Derg (Shannon) SPA description.
Ballyallia Lake pNHA	000014	Description of pNHA not available, see Ballyallia Lake SAC.
Ballycar Lough pNHA	000015	This is a small calcareous lake. It has a considerable ecological value which stems from the transitory state of the fen vegetation on the northern limb. At this site, bog vegetation such as the Bog-myrtle (<i>Myrica gale</i>) and the Purple Moor-grass (<i>Molinia caerulea</i>) has invaded a fen community so that conditions are finely balanced between the two.
Ballycullinan Lake pNHA	000016	Description of pNHA not available, see Ballycullinan Lake SAC description.
Ballyogan Lough pNHA	000019	Description of pNHA not available, see Ballyogan Lough SAC description.
Black Head-Poulsallagh Complex pNHA	000020	Description of pNHA not available, see Black Head- Poulsallagh Complex SAC description.
Cahermurphy Wood pNHA	000022	The conservation value of this site comes from the presence of oak woodland which is on relatively fertile soil. Ireland has very few areas of this woodland.
Cliffs of Moher pNHA	000026	Description of pNHA not available, see Cliffs of Moher SPA description
Clonderlaw Bay pNHA	000027	Description of pNHA not available.
Cloonlara House pNHA	000028	This is a site of international importance and is one of the biggest nursery sites in Ireland and Europe for the Leisler Bat (<i>Nyctalus leisleri</i>).
Danes Hole, Poulnalecka pNHA	000030	Description of pNHA not available, see description of Danes Hole, Poulnalecka SAC.
Dromore Woods and Loughs pNHA	000032	Description of pNHA not available, see description of Dromore Woods and Loughs SAC.
Durra Castle pNHA	000033	Its significance lies in the fact that it is one of the few nursery sites at the eastern edge of the distribution of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) in Ireland. There is also a suitable foraging habitat in close proximity to the site.
Fort Fergus	000035	This site is of national importance for the presence of the Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>). It is one of the few known

(Ballynacally) NHA		areas in Munster where this species is found.
Inagh River Estuary	000036	Description of pNHA not available, see description of Inagh River Estuary SAC.
Pouladatig Cave	000037	Description of pNHA not available, see description of Pouladatig Cave SAC.
Inchicronan Lough pNHA	000038	A wide range of habitats can be found around the lake and include an area of cut-over bog to the north, Ash (<i>Fraxinus excelsior</i>) and Hazel (<i>Corylus avellana</i>) woodland along the eastern shore, a complex mosaic of wet grassland, dense scrub and marsh at the southern end and a habitat of significant interest on the western side of the lake due to the presence of the Limerick-Sligo railway line.
Loop Head pNHA	000045	No description of pNHA available, see description of Loop Head SPA.
Lough Goller pNHA	000048	This site is designated for the presence of the Spring Quillwort (<i>Isoetes echinospora</i>) growing on the southern shore of the lake and is a rare plant in Ireland.
Derrygeeha Lough pNHA	000050	This is only one of two stations at which the rare Caddisfly (<i>Cyrnus insolutus</i>) can be found in Ireland. It is a site of international importance.
Lough Gash Turlough pNHA	000051	Description of pNHA not available, see description of Lough Gash Turlough SAC.
Moneen Mountain pNHA	000054	Description of pNHA not available, see description of Moneen Mountain SAC.
Moyree River System pNHA	000057	Description of pNHA not available, see description of Moyree River System SAC.
Newpark House (Ennis) pNHA	000061	Description not available.
Paradise House (Ballynacally) pNHA	000062	A site of national importance as it is one of the few Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) roosts known in this area of Munster.
Poulnagordon Cave (Quin) pNHA	000064	Description of pNHA not available, see description of Poulnagordon Cave SAC.
Poulnasherry Bay pNHA	000065	Description not available.
Tullaheer Lough and Bog NHA	000070	Description of pNHA not available, see description of Tullaheer Lough and Bog SAC.
Turloughnagullaun pNHA	000071	This is a diverse turlough in topography and vegetation. It contains rare and unusual plant species including the Red Data Book species Fen Violet (<i>Viola persicifolia</i>) is located here.
Farrihy Lough pNHA	000200	Consists of a brackish lake which is of great importance to large numbers of waders and duck during winter. This site has a good range of habitats supporting a variety of floral species. The influence of the sea is reflected in the vegetation with many maritime species recorded from the area which include Thrift (<i>Armeria maritima</i>), Buck's-horn Plantain (<i>Plantago coronopus</i>) and Common Scurvygrass (<i>Cochlearia officinalis</i>).
Castle Lake pNHA	000239	This site consists of diversity of wetland and woodland habitats which range from open water and reed-beds to lakeside wet deciduous woodland to ash/oak woodland and scrub to species-rich wet fields and marsh.
Galway Bay Complex pNHA	000268	Description of pNHA not available, see description of Galway Bay Complex SAC.
Loughatorick South Bog pNHA	000308	Description of pNHA not available, see description of Loughatorick South Bog SAC.
Ballyteige (Clare) pNHA	000994	Description of pNHA not available, see description of Ballyteige (Clare) SAC.
Ballyvaughan	000996	Description of pNHA not available, see description of Ballyvaughan

Turlough pNHA		Turlough SAC.
Cahiracon Wood pNHA	001000	Description not available.
Cahiracalla Wood pNHA	001001	It is a great example of relatively intact mostly native woodland. The presence of scrub, wet woodland and limestone pavement provides for habitat diversity at this location.
Cloonsnaghta Lough pNHA	001004	This site is significant as a population of Arctic Char (<i>Salvelinus alpinus</i>) can be found here. This species is listed in the Irish Red Data Book.
White Strand/ Carrowmore Marsh pNHA	001007	Description not available.
Dromoland Lough pNHA	001008	Designated for the presence of a diverse range of marsh species which include Bottle Sedge (<i>Carex rostrata</i>), Slender Sedge (<i>C. lasiocarpa</i>), Tufted-sedge (<i>C. elata</i>), Lesser Tussock-sedge (<i>C. diandra</i>), Greater Pond-sedge (<i>C. riparia</i>), Fibrous Tussock-sedge (<i>C. appropinquata</i>), Long-stalked Yellow-sedge (<i>C. lepidocarpa</i>), Reed Canary grass (<i>Phalaris arundinacea</i>), Grass-of-parnassus (<i>Parnassia palustris</i>) and Eyebright (<i>Euphrasia scottica</i>).
Fin Lough (Clare) pNHA	001010	The beetle, <i>Panagaeus cruxmajor</i> has been recorded twice at this location. This is one of a small number of stations for this insect in Ireland.
Garrannon Wood pNHA	001012	This site is significant as it has a fairly intact and mature oak (<i>Quercus spp</i>) wood.
Glenomra Wood pNHA	001013	Description of pNHA not available, see description of Glenomra Wood SAC.
Gortglass Lough pNHA	001015	Designated for the presence of the Artic Char (<i>Salvelinus alpinus</i>). In addition, it is a good example of an acid lake with typical surrounding vegetation.
Lough Cullaunyheeda pNHA	001017	This site contains nationally important numbers of Tufted Duck (<i>Aythya fuligula</i>) and Coot (<i>Fulica atra</i>).
Lough O'Grady pNHA	001019	Designated for the presence of Greenland White-fronted Geese (<i>Anser albifrons flavirostris</i>). It also contains a diverse range of habitats which include open water, wet grassland/ marsh, wet woodland and scrub.
Carrowmore Point to Spanish Point and Islands pNHA	001021	Description of pNHA not available, see description of Carrowmore Point to Spanish Point and Islands SAC.
Caherkinallia Wood pNHA	001024	This site is significant as it contains one of the few remaining deciduous woodlands in this area of Clare. The Sessile Oak (<i>Quercus petraea</i>) is the most dominant species. A lower canopy of wood consists of Hazel (<i>Corylus avellana</i>), Holly (<i>Ilex aquifolium</i>), Downy Birch (<i>Betula pubescens</i>) and Rowan (<i>Sorbus aucuaria</i>).
St. Senan's Lough pNHA	001025	Designated for the presence of a significant marsh habitat which contains peat- forming Sphagnum moss (<i>Sphagnum spp.</i>) and cut-away bog.
Lough Cleggan pNHA	001331	This site has a diverse range of habitats and plant species which include the Common Reed (<i>Phragmites australis</i>), Bottle Sedge (<i>Carex rostrata</i>), Yellow Irish (<i>Iris pseudacorus</i>), Hazel (<i>Corylus avellana</i>), Willow (<i>Salix spp.</i>), Ash (<i>Fraxinus excelsior</i>), Rushes (<i>Juncus spp.</i>), Marshmarigold (<i>Caltha palustris</i>), and Meadowsweet (<i>Filipendula ulmaria</i>). The lake is of local importance for wintering waterfowl. Breeding bird species include the Tufted Duck (<i>Aythya fuligula</i>) and Coot (<i>Fulica atra</i>).
Cloonamirran Wood pNHA	001686	A good example of the relatively rare habitat – wet mixed deciduous woodland on raised bog. It is also a fine example of plant succession.

Lough Graney Woods pNHA	001714	This site is significant as it contains acid woodland where succession and regeneration is occurring naturally. The wood is a native mixed woodland
Scattery Island pNHA	001911	Description not available.
Glendree Bog pNHA	001912	Description of pNHA not available, see description of Glendree Bog SAC.
East Burren Complex pNHA	001926	Description of pNHA not available, see description of East Burren Complex SAC.
Knockalisheen Marsh pNHA	002001	The site is of high ecological value in that it is a good example of unimproved pasture and wetland with good botanical diversity. This habitat type is now scarce, particularly so close to an urban environment. The site is notable for the presence of several species of orchid, including Marsh Helleborine (<i>Epipactis palustris</i>). There is also a colony of Skullcap (<i>Scutellaria galericulata</i>), a wetland plant which is rare in County Clare.
Old Domestic Building (Keevagh) pNHA	002010	Description of pNHA not available, see description of Old Domestic Building (Keevagh) SAC.
Fergus Estuary and Inner Shannon, North Shore pNHA	002048	Description not available.
Rosroe Lough pNHA	002054	Designated for the presence of Holly (<i>Ilex aquifolium</i>) -dominated scrub and associated grassland. This location contains a finely struck balance between the requirements of moisture and acid-loving species and those requiring a more demanding dry, alkaline regime.
Termon pNHA	001321	Description of pNHA not available.
Newhall and Edenvale Complex pNHA	002091	Description of pNHA not available, see description of Newhall and Edenvale Complex SAC.

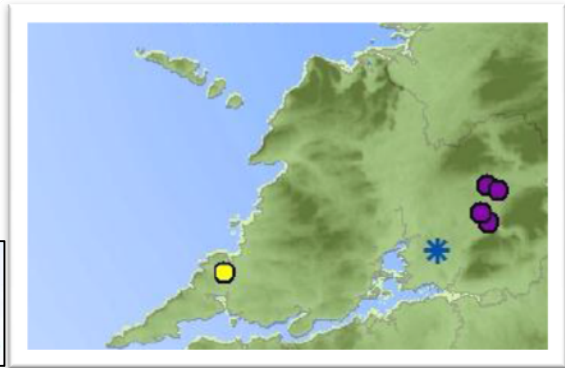
Peatlands

Peat soils cover 20.6% of the national land area. The original area of raised bogs in the State was approximately 311,000ha and the original area of blanket bogs was approximately 774,000ha. Approximately 5.7% of the landcover in the county is peatland (19600ha). The presence of these bogs habitats and their international importance is reflected in the high number of sites with natural heritage designations as shown in **Tables 5.6.3** and **5.6.4**. Whilst many of the bogs are protected through their designation as National Heritage Areas under the Wildlife Amendment Act, there are other areas that are not protected which lie outside of the NHA designation. Ireland has nominated 53 sites as Raised Bog SACs under the EU Habitats Directive and therefore is required under the directive to put in place measures to protect these sites from deterioration. The aim of the National Raised Bog SAC Management Plan is to provide clarity to all parties regarding how these sites will be managed and restored into the future in co-operation with land-owners and local communities and in keeping with legal obligations.² Within the Draft National Raised Bog Management Plan 3 raised bog NHAs and 1 raised bog SAC have been identified within County Clare and analysed as follows;

² <http://www.raisedbogconservation.com/>

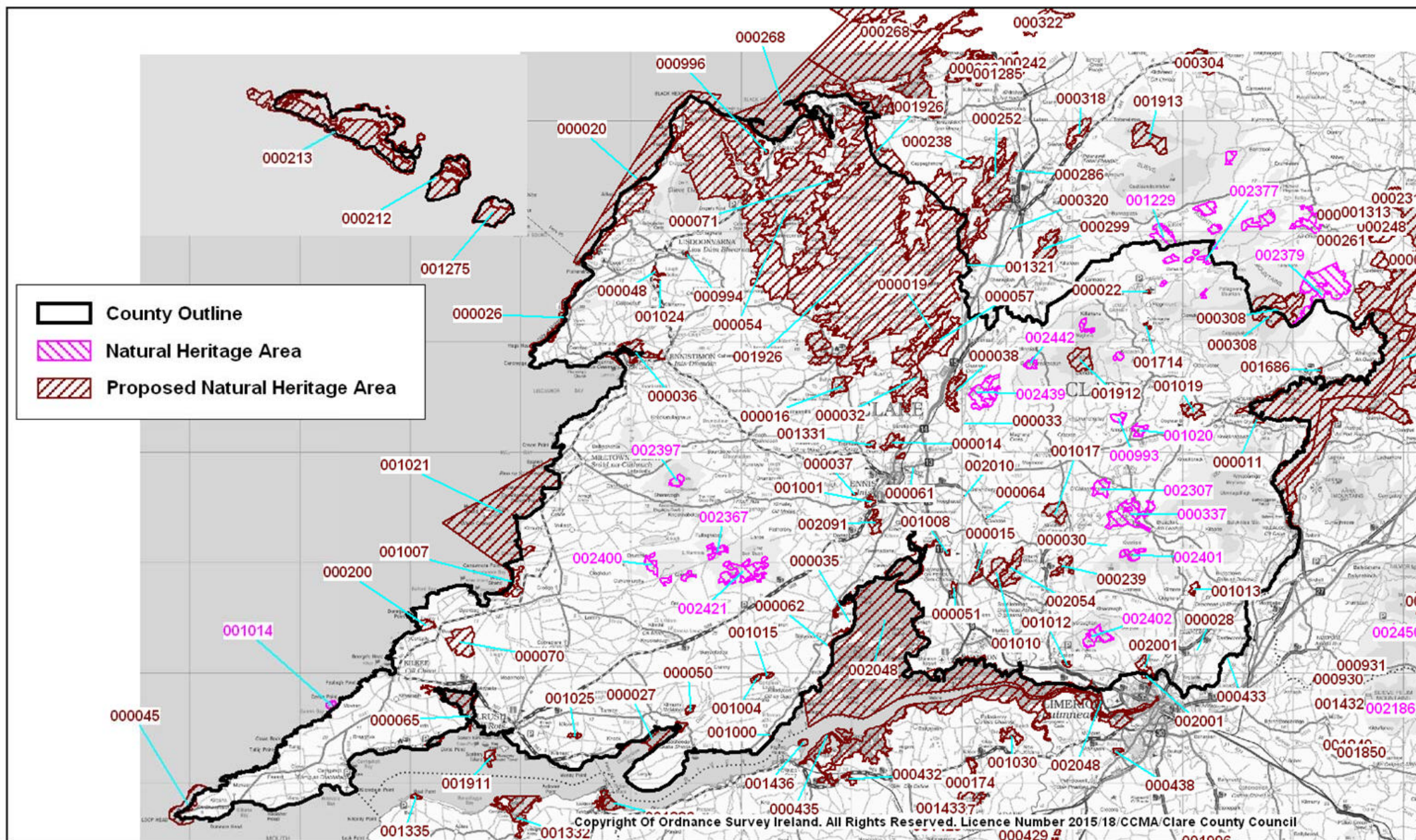
- Tullagher Lough and Bog SAC – 002343
- Ayle Lower Bog NHA – 993
- Loughanilloon Bog NHA – 1020
- Cloonlough More bog NHA – 2307
- Doon Lough Bog NHA - 000337

●	Special Area of Conservation (SAC) bogs
●	Natural Heritage Area (NHA) bogs
*	Non-designated sites of potential conservation value



Trees

In line with CDP Objective 14.17 which seeks to preserve and conserve individual or groups of trees identified in Volume 2 of the plan as “Trees for Preservation” and to carry out tree survey work during the lifetime of the Plan to identify future trees of importance in the county, Clare County Council through funding from the Heritage Council commissioned a survey to record existing trees in chosen settlements of County Clare during 2015. The survey categorised trees suitable for retention and assessed their quality and value. The following settlements were included in the survey; O’Briensbridge, Killaloe, Bridgetown, Ogonelloe, Scariff, Tuamgraney, Whitegate, Mountshannon, Tulla and Sixmilebridge. The results of the tree survey were analysed to provide further commentary on the significance of individual trees which have been assessed as Category A and B in accordance with British Standard BS 5837:2012 “Trees in relation to design, demolition and construction – Recommendations”. The results of this study have been incorporated into the SEA Assessment of Volume 3 and documented in Appendix B of Volume 10 SEA ER for each of the relevant settlements listed above.



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.3 Natural Heritage Areas / Proposed Natural Heritage Areas

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.6.7 Ramsar Sites

There are two wetlands within the County that are designated as Ramsar Sites which are considered to be of international importance ecologically, especially with regard to wetland waterfowl. These sites are included in **Table 5.6.5**.

Table 5.6.5 Ramsar Sites within the Plan area

Ramsar Site	Site Code	Designated for the presence of the following
Ballyallia Lake	845	308ha including two small lakes set in heavily farmed land, with a low lying flood plain of wet grassland and rough grazing. Site supports internationally and nationally important numbers of various species of waterbirds.
Inner Galway Bay	838	11,905 ha incorporating a shallow sheltered part of large sea bay with numerous intertidal inlets and small low islands. Site supports internationally and nationally important numbers of various species of waterbirds.

5.6.8 Wetlands

A wetland is an area that is saturated by water and this saturation has allowed specially adapted plants and animals to establish. Clare is home to many different wetland types due to the wet climate, topography, geology, hydrology and soil types. Many of these are regarded as being internationally important.

Wetlands are effectively the border between the open water and dry land. Reeds, sedges, water forget-me-not, marsh marigold and purple loosestrife provide cover for ducks and wading birds. Other wetlands, such as bogs, heath and fens, occur where the water table is close to the surface, or where the bedrock is impenetrable.

Wetlands, such as fens and bogs, only retain carbon if they are moist. Therefore when a bog or fen is drained or infilled, they become major carbon sources, releasing huge quantities of carbon dioxide into the atmosphere as the peat decays and oxidises. In addition, the changing conditions result in the loss of water dependant species. Changes in water quality as a result of pollution (from surface run-off, WWTPs etc.) also significantly impact wetlands.

The value of wetlands include their function in improving water quality, for floodwater storage whereby they can slow down the force of flood and storm waters as they travel downstream; habitat for wildlife; support biodiversity; provide valuable open space and create recreational opportunities; are vital for preventing further climate change by acting as carbon storage and are part of cultural heritage³.

There are many wetland areas in the county (290), many of which are protected under national or European designations in the form of SACs, SPAs, NHAs and pNHAs. There are many more wetland areas (See **Figure 5.6.4**) outside of designated sites as well as potential wetland sites which, due to geology and hydrogeology of the area, include turloughs some of which only become visible during the wetter winter months. In addition there are significant areas of cladium fen (priority Annex habitat) in the County.

³ The County Clare Wetlands Survey 2008

5.6.9 Other Sites of Environmental and Ecological Importance

There are a number of other sites across the County that have been designated for environmental and/or ecological protection. These include the Burren National Park, Nature Reserves and Wildfowl Sanctuaries. These are areas of huge importance for the protection of biodiversity at a local level and also in the provision of amenity and educational resource.

5.6.10 Burren National Park

The Burren National Park is located in the south-eastern corner of the Burren, which is located in the northern part of County Clare and is approximately 1500ha in size. Highly significant habitats can be found in the Burren which include; Limestone Pavement, Calcareous grassland, Hazel scrub, Ash/hazel woodland, Turloughs, Lakes, Petrifying springs, Cliffs and Fen. Mammals recorded in the Burren National Park include Irish Hare (*Lepus timidus hibernicus*) and Otter (*Lutra lutra*). The Burren and Cliffs of Moher have successfully retained its Geopark designation for a further period following a reassessment and revalidation by the UNESCO supported Global Geopark Network in September 2015.

5.6.11 Statutory Nature Reserves

A nature reserve is an area of importance to wildlife, which is protected under Ministerial order. Most are owned by the State although some are owned by organisations or private landowners. There are four statutory nature reserves in the county and these are set out in **Table 5.6.6**. The extent of each Nature Reserve was also used as part of the Environmental Sensitivity map (See **Figure 5.13.4** and **Section 5.12 of the SEA ER.**)

Table 5.6.6 Statutory Nature Reserves within the County

Name	Location	Details
Ballyteigue Nature Reserve	2km east of Lisdoonvarna	6.4ha of primarily molinia meadows (wet grassland) habitat. The marsh orchid is found in abundance on the site. Hare, Snipe, Common Frog and Orange Tip Butterfly can also be found on the site.
Caher (Murphy) Nature Reserve	In the Slieve Aughty Mountains	9ha of oak wood on moist fertile soil and contains a rich ground flora.
Dromore Wood Nature Reserve	Near Ruan, 10km north of Ennis	370ha of rivers, lakes, turloughs and callows, limestone pavement, fen peat, reed and rush beds and vast areas of species rich woodland. The area comprises perfect habitat for a huge variety of flora and fauna species. Pine marten, red squirrel, a number of active badger sets, stoat, fox and hares are common in the reserve. At least eight of the nine species of Irish bats are known to inhabit the woodland including a number of bat roosts. The lakes (fed by the River Fergus) provide perfect habitat for otters, coots, grebe, moorhen, water rail and heron. Teal, widgeon, goldeneye and tufted duck, pochard and shoveler feed on flooded meadows during winter. Whooper swans, and white tailed eagles have visited during winter. Large varieties of Irish butterflies, dragonflies and damselflies.
Keelhill (Slieve Carron/Eagle's Rock) Nature Reserve	Situated in the north-east edge of the Burren plateau	A good example of karst topography containing three distinct vegetation communities i.e. woodland, scrub grassland and pavement.

5.6.12 Wildfowl Sanctuaries

Wildfowl sanctuaries are areas that have been excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed. Shooting of game birds is not allowed in these sanctuaries of which there are 5 within the county. These are:

- Mutton Island
- Islandavanna
- Tullagher Lough
- Ballyallia Lough
- Inagh River (part of)

5.6.13 The Shannon Estuary

The Shannon Estuary is one of the most important sites in Ireland for wintering and migrating waterbirds, supporting 10 bird species in numbers of international importance and a further 13 bird species occurring in numbers of national importance (Crowe, 2005). The entire Estuary is designated a Special Area of Conservation (SAC). The Estuary as far west as Doonaha is also designated as a proposed Special Protection Area (pSPA). In 2011, NPWS proposed an extension to the SPA bringing the extent of the designation from Foynes further west to the outer part of the estuary. The designation process will be completed once the S.I. has been signed by the Minister. This does not affect the protection afforded to the site from the date of the advertisement which was June 2011. The Shannon Estuary is also one of the most important habitats in Ireland, if not Europe, for bottlenose dolphins *Tursiops truncatus*. It is home to Ireland's only known resident populations of bottlenose dolphins and is designated as a candidate Special Area of Conservation (cSAC) for this species. All cetaceans are listed under Annex IV (including those in Annex II) of Council Directive 92/43/EEC (the Habitats Directive). Accordingly, under Article 12 of that Directive, it is an offence to deliberately capture, disturb or kill a cetacean or take actions that result in deterioration or destruction of their breeding sites or resting places. The entire Shannon Estuary is also important for a number of migratory fish species some of which are protected under EU directives and have up and down stream migrations at various times throughout the year depending on the particular fish life stage, shown in **Table 5.6.7**. Fishing activity is particularly relevant in the context of dredging and development works and forms a crucial part of the dumping at sea permit application process through the EPA.

Table 5.6.7 Generalised timing of life stages of relevant migratory fish species using the Shannon Estuary (Source; IFI)

Fish species	EU Status	Life Stages	Estuary transit
Atlantic salmon	Habitats Annex II	Adult upstream migration	All times of year; "Spring" fish; grilse run in June-July
		Smolt downstream run	March - June
Sea Lamprey	Habitats Annex II	Upstream Adult spawning migration	April - July
		Seaward migration of young adults	Autumn - Winter
River Lamprey	Habitats Annex II	Upstream Adult spawning migration	Autumn - Winter
		Seaward migration of young	Autumn - Winter

		adults	
Smelt	None	Adult upstream spawning migration	February – April
		Larval – young adult downstream migration	Post – spawning gradual downstream dispersal – April - August
Eel	EU Eel Action Plan	Upstream migration of elvers	
		Downstream of adult fish	Autumn

5.6.14 Native Woodlands

There are 112 native woodlands within the County⁴. Ancient woodlands are considered to be those which are established and had continuous cover before afforestation and planting became common practice in Ireland. Ancient woodlands are vulnerable to impacts from clearing and sensitive due to their age and habitat types associated with them. A provisional inventory of ancient woodlands undertaken by the NPWS shows that there are 150 within the County.

5.6.15 Coastal Sites

The NPWS has also conducted a number of coastal inventories documenting different coastal and shoreline features. There are 1,149 salt marshes around the Clare coastline. As part of the coastline monitoring project inventory, there are 228 other coastline habitat (including those on Annex 1) are recorded for County Clare. Additionally there are 8 coastal lagoons in County Clare.

5.6.16 Protected Habitats and species outside of Designated Sites

Habitat mapping, bat surveys and tree surveys have helped to identify habitats and species which occur outside of designated sites, but which are protected under European and National legislation. These include lesser horseshoe bat roosts, cladium fens, turloughs and other wetlands, oak-ash-hazel woodland, and riparian woodland, among others. These were also used to inform the assessment.

The freshwater pearl mussel is an extremely sensitive species which is currently on in IUCN Red List of Threatened Species and is rated as ‘critically endangered’ throughout the island of Ireland. Populations of the freshwater pearl mussel can be damaged in a numbers of ways including the removal of river boulders and gravels, or through works such as building bridges, weirs or bank reinforcements within the mussel habitats.

Within County Clare there is one freshwater pearl mussel SAC population for which the river catchment is protected. This is the Cloon River system which is located on the north shore of the Shannon Estuary feeding into the estuary at its downstream end as outlined in **Tables 5.6.1 & 5.6.7** and as shown in **Figure 5.10.8**.

The freshwater pearl mussel is acknowledged to be one of the most demanding species of high water quality and high river bed quality in the world. Due to the extreme sensitivity of the FPM, all land use activities in the catchment must be in keeping with the needs of a thriving mussel population, as just one damaging activity can destroy the good work in the rest of the catchment.

⁴ NPWS Native Woodlands Survey 2003-2007 (updated 2011)

Whilst Ireland and Northern Ireland support a significant proportion of the FPM populations remaining in Europe, these populations have been in dramatic decline in recent years, with an estimated loss of over a million mussels between 2007 and 2013 (DAHG, 2013). The species is on the IUCN Red List of Threatened Species and throughout the island of Ireland it is rated as critically endangered.

Populations of the freshwater pearl mussel can be damaged in a number of ways. Direct damage to the mussel and its habitat can occur through removal of river boulders and gravels, or through building bridges, weirs or bank reinforcements, excavation of materials which are extremely sensitive to the freshwater pearl mussel and its habitat such as peat.

Actions in areas outside the immediate habitat of the mussel may also be damaging. This damage may result from a range of activities but occurs in four main ways.

- *Changes in River Flow:* Activities such as land drainage, major land use changes, water abstraction, physical changes to the river and its tributaries by dredging or straightening can all affect the quantity of water in the river, and the speed and direction of river flow.
- *Addition of Chemicals and Nutrients:* A range of substances cause harm to mussels when they enter the river. Industrial pollutants, nutrients (phosphorus and nitrogen which may come from forestry, agriculture, agri-based industries, waste management facilities and sewage inputs), and pesticides (particularly sheep dip) are of serious concern in FPM catchments.
- *Inputs of Sediment:* Land drainage, construction works, tillage and animal poaching are among the many activities that can result in the movement of fine sediment from the land to water. Over time this eroded sediment makes its way through ditches and streams into the river and onto pearl mussel populations.
- *Biotic factors:* Where any of the issues above negatively affect the salmonid host of the FPM, damage to mussel populations will also result due to failure of FPM larvae to find host fish. Any reduction in numbers and distribution extent (range) of FPM results in damage to the resilience of FPM through genetic loss.

There has been a considerable decline in species distribution and numbers throughout the island of Ireland with all designated populations currently at unfavourable conservation status.

In Ireland, regulations have been introduced (The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009, S.I. No. 296 of 2009) which set objectives for FPM catchments. A requirement of these regulations is the production of sub-basin management plans for each of the 27 designated populations of FPM. Draft sub-basin plans have been prepared and are available for download at www.wfdireland.ie. The FPM sub-basin plans identify critical local pressures and impacts on the freshwater pearl mussel and provide possible measures for restoration to favourable conservation status. The Cloon is one of these 27 populations which is currently at unfavourable conservation status.

In addition, Clare contains three other catchments which are identified as freshwater pearl mussel Sensitive Areas by National Parks and Wildlife Service this are as follows;

- Doonbeg
- Shannon – Graney/Scariff
- Shannon – Woodford

These margaritifera sensitive areas contain catchments of other extant populations or catchments with previous records. The potential effects of any plans, developments or activities on the populations, including the potential to cause ‘environmental damage’ as per the Environmental Liability Directive and Regulations, must be determined through SEA, EIA or other ecological assessment. The NPWS holds some detailed information on the distribution and abundance of freshwater pearl mussels in a small number of these catchments. The location and extent of these sensitive areas is shown in **Figure 5.10.8**.

5.6.17 NPWS Rare and Protected Species Data

The NPWS Rare and Protected Species database was consulted for records of species of conservation importance. According to this database, the study area lies within the 10km grid squares (hectads) M00, M10, M11, M20, M21, M30, M31, Q64, Q65, Q74, Q75, Q84, Q85, Q86, Q95, Q96, Q97, Q98, Q99, R05, R06, R07, R08, R09, R14, R15, R16, R17, R18, R19, R26, R27, R28, R29, R36, R37, R38, R39, R45, R46, R47, R48, R49, R55, R56, R57, R58, R59, R67, R68, R69, R78 and R79.

According to this database, there are records for 25 rare and protected species within these grid squares. However, the NPWS dataset is known to be incomplete, particularly in respect of fish, bats and birds, and therefore the absence of records for a certain species does not necessarily mean that the species does not occur within the study area. The relevant hectads and the rare and protected species recorded within these squares are detailed in **Table 5.6.8**.

Table 5.6.8 NPWS Rare and Protected Species Records

Common Name	Scientific Name	Grid Square	Sample Location	Date Recorded
Mudwort	<i>Limosella aquatica</i>	M00	Poulsallagh	1971 & 1924
Round Prickly-headed Poppy	<i>Papaver hybridum</i>	M10	Murrough	1895
Small-white Orchid	<i>Pseudorchis albida</i>	M11	Black Head/ Poulsallagh complex M1010	1952
Round Prickly-headed Poppy	<i>Papaver hybridum</i>		Gleninagh M1010 & Black Head/ Poulsallagh complex M1010	1895 1880
Small-white Orchid	<i>Pseudorchis albida</i>	M20	Ballyvaughan M20, Burren	1891 & 1913 1851
Narrow-leaved Bitter-Cress	<i>Cardamine impatiens</i>		Ballyvaughan Harbour M20	1966 & 1993
Wood small-reed	<i>Calamagrostis epigejos</i>		Black Head/ Poulsallagh complex M20	1952 & 1899
Pale Heath Violet	<i>Viola lactea</i>		Ballyvaughan M2000	1900
Narrow-leaved Helleborine	<i>Cephalanthera longifolia</i>			1912
Round Prickly-headed Poppy	<i>Papver hybridum</i>	M21	Muckinish M2010	1895
Round Prickly-headed Poppy	<i>Papver hybridum</i>	M30	Kinvara M3000	1900
Mudwort	<i>Limosella aquatica</i>	R09	Fisherstreet R09	27/05/1985 & 1896
Small-white Orchid	<i>Pseudorchis albida</i>	R18	Ennistymon R1080	1901
Small-white Orchid	<i>Pseudorchis albida</i>	R19	Lisdoonvarna & Kilmoon	1864 & 1993 1896
Meadow Barley	<i>Hordeum secalinum</i>	R26	Killadysert R290630	1990 & 1907
Killarney Fern	<i>Trichomanes speciosum</i>	R27	-	1879
Otter	<i>Lutra lutra</i>	R28	Inagh, Ennis R2080	28/11/1990
Round Prickly-headed Poppy	<i>Papaver hybridum</i>		Corofin R2080	1905 & 1898

Chives	<i>Allium schoenoprasum</i>	R29	Rinnamona R296935	29/08/2001, 1998 & 23/07/2004
Mudwort	<i>Limosella aquatica</i>		Lough Inchiquin, Co. Clare R29	1905 & 1893
Meadow Barley	<i>Hordeum secalinum</i>	R36	Deer Island R3060	1907
Orange Foxtail	<i>Alopecurus aequalis</i>		Lough Gash R3968	1996
Hairy Violet	<i>Viola hirta</i>		O'Grady Island R3060	1907
Meadow Barley	<i>Hordeum secalinum</i>	R37	Islandmagrath Point R373714	18/08/2004
Penny Royal	<i>Mentha pulegium</i>		Ennis, near River Fergus R300700	1868 & 1892
Otter	<i>Lutra lutra</i>		Kilmore, Ballyea, Ennis R3070	11/06/1990
Mudwort	<i>Limosella aquatica</i>	R38	Lough Atedaun R310880	1984 & July 1981
Round Prickly-headed Poppy	<i>Papaver hybridum</i>		Crusheen R3080	1880
Pine Marten	<i>Martes martes</i>		Fountain, Ennis	25/02/1991
Narrow-leaved Helleborine	<i>Cephalanthera longifolia</i>	R39	-	1980
Chives	<i>Allium schoenoprasum</i>		Lough Gealain R39	1984
Hairy Violet	<i>Viola hirta</i>		Mullaghmore R3090	1969 & 1965
Small-white Orchid	<i>Pseudorchis albida</i>		Glanquin R39	1892
Triangular Club Rush	<i>Scirpus triqueter</i>		Ferry Bridge R4852	1996 & 1999
Triangular Club Rush	<i>Scirpus triqueter</i>	R46	Owenagarney River R465613	1999
Penny Royal	<i>Mentha pulegium</i>		Bunratty R46	1804
Fallow deer	<i>Dama dama</i>	R47	Mooghan South, Dromoland R4070	04/08/1990

Triangular Club Rush	<i>Scirpus triqueter</i>	R55	Westfields R569569, River Shannon, Clonmacken R550563, Cratloe Creek R518585, Tervoe Creek R520560, Barringtons Quay R557567, Meelick Creek R532585, Ballinacurra Creek R5556 & R554556 River Shannon, Coonagh West R528564 & River Shannon, Copperhill R520568	19/09/2001 1900 & 1993 1910 & 1993 1988, 1993 & 1999 1993 & 1899 07/09/2001 & 1999 1993, 1999 & 07/09/2001 1994 1993
Penny Royal	<i>Mentha pulegium</i>		Rosbrien R580550	1897
Meadow Barley	<i>Hordeum secalinum</i>		Limerick R5050 & Raheen R550522	- 1998
Opposite-leaved Pondweed	<i>Groenlandia densa</i>		Loughmore R5453, River Abbey Dwyers Bridge R585576, Limerick R5456, Loughmore R5453 & Sarsfield Bridge R555570,	1998 1998 & 1984 1993 & 1909 1990 1983, 01/08/1985 & 01/07/1993
Autumn Crocus	<i>Colchicum autumnale</i>		-	1825
Pine marten	<i>Martes martes</i>	R56	Cratloe R5060	05/02/1990
Fallow deer	<i>Dama dama</i>	R59	Maghera Lough R5090	05/08/1991
Narrow-leaved Helleborine	<i>Cephalanthera longifolia</i>			1997
Fallow deer	<i>Dama dama</i>	R68	Bodyke	20/03/1991
Pine Marten	<i>Martes martes</i>		Bodyke R6080	20/03/1991
Otter	<i>Lutra lutra</i>	R69	near Lough Graney	30/04/1991
Fallow deer	<i>Dama dama</i>		Near Lough Graney R6090	30/04/1991

Wood small-reed	<i>Calamagrostis epigejos</i>		Lough Atorick R69	1971 & 1924
Otter	<i>Lutra lutra</i>	R78	Oganolloe, Carrowgar Bay R7080	23/03/1991
Irish Fleabane	<i>Inula salicina</i>		-	1932 & 1899
Fallow deer	<i>Dama dama</i>		-	23/03/1991
Red deer	<i>Cervus elaphus</i>		-	23/03/1991
Fallow deer	<i>Dama dama</i>	R79	Bohatch R7090	22/05/1991
Irish Fleabane	<i>Inula salicina</i>		-	1935 & 1885
Betony	<i>Stachys officinalis</i>		Lough Derg R7794 & Woodford R7090	15/09/1993 1983 & 1993
Bog Orchid	<i>Hammarbya paludosa</i>		-	1898

Source: NPWS Rare and Protected Species database.

There are no records held on the NPWS database for the following 10km grid squares: M31, Q64, Q65, Q74, Q75, Q84, Q85, Q86, Q95, Q96, Q97, Q98, Q99, R05, R06, R07, R08, R14, R15, R16, R17, R48, R49, R57, R58 and R67, and so they have not been included in this table.

5.6.18 Green Infrastructure

While green infrastructure promotes the amenity and quality of life value of nature within urban settings and is not solely for the benefit of biodiversity, it is noted that it can contribute significantly to the retention and enhancement of ecological connectivity.

Green Infrastructure is defined as ‘an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations’ (Comhar, 2010). Such spaces include woodlands, coastlines, flood plains, hedgerows, fields, gardens, turloughs, lakes, city parks and street trees, and the benefits to humans they provide include water purification, flood control, carbon capture, food production and recreation. Incorporation of green infrastructure in spatial planning and sectoral decision making helps to prevent biodiversity loss and fragmentation of ecosystems, thus restoring, maintaining and enhancing ecosystems and their services. It will improve resilience and adaptation to climate change and enable greater connectivity between ecosystems in protected areas and the wider countryside. The European Commission produced a strategy on green infrastructure in 2012. Due to its obligations under the European Landscape Convention, Ireland has prepared a Draft National Landscape Strategy (July 2014) which will also have significant implications for biodiversity.

There are many inter-relationships between green-infrastructure and other environmental parameters, for instance, its integration with human health through sport and recreation opportunities as well as increasing accessibility to amenity and recreation areas and promoting social inclusion; natural heritage and cultural heritage (e.g. West Clare Railway). Clare is rich in biodiversity and developing the connectivity between these offers great potential in the Plan area

5.6.19 Riparian Zones

The riparian zone is an integral part of any watercourse system serving ecological as well as practical functions, for example, the vegetation provides bank stability during flood conditions and filters pollutants out of surface water before it reaches a river or lake. A riparian buffer zone is a strip of vegetated land running parallel to the river which acts as a buffer against negative human development activity, which must be sufficiently wide to protect the river. It must be large enough to protect the ecological integrity of the river and the riparian zone but can incorporate amenity uses provided it is done sensitively with minimal impact on the water and riparian environment.

The county has a network of rivers and streams as shown on Figure 5.5 together with their Water Framework Directive status, many of which are designated SAC and/or SPA or flow into such designated rivers and lakes and are an intrinsic part of green infrastructure.

5.6.20 Protected Species within the Plan Area

Within the Plan area Annex II species present include Atlantic Salmon, Otter, Sea, River and Brook Lamprey, freshwater pearl mussel and nine out of ten species of bats in Ireland, including the Annex IV species the Lesser Horseshoe Bat and the Annex II Brown Long-Eared Bat.

There are a number of recorded bat roosts within the Plan area with many more adjacent to it as shown in **Figure 5.6.6**.

Table 5.6.8 sets out the characteristics of the protected species within the Plan area and the threats and issues relevant to them.

Table 5.6.9 Protected Species within the County

Species	Characteristics	Threats and Issues
Brown long-eared bat	This is quite a common bat Annex IV species (Code 1326). It can be seen around old churches. Common habitats are woodland for feeding and attics in buildings for roosting, in tree holes, farm buildings and bat boxes. They feed on a wide range of insects and forage in broad-leaved woodlands, along tree-lines, in scrub, conifer plantations, mature gardens, parklands and orchards.	Conservation status is favourable
Lesser Horseshoe Bat	This bat is an Annex II and IV species (Code 1303) and is common in Ennis and across the county due to the presence of caves and large houses with suitable attics, have internationally important populations as declining in the rest of Europe. They roost and hibernate in caves and under old bridges, breed in buildings and feed along hedgerows. Forages in deciduous woodland and riparian vegetation. The species is known to rely on linear landscape features to commute from roosts to feeding sites.	Very sensitive to disturbance. Loss of suitable summer and winter roosting sites due to the deterioration/renovation of derelict buildings, loss of commuting routes linking roosts to foraging sites and loss of suitable foraging sites are the major threats to this species. The overall conservation status of this species is assessed as favourable.
Atlantic Salmon	The Atlantic salmon (Annex II and IV) breeds in freshwater but spends much of its life at sea. The salmon population in Ireland has declined by 75% in recent decades and only	There are numerous factors which impact negatively on salmon, the most important of which are reduced marine survival (probably as

	43 out of 148 Irish rivers in which they still occur have healthy populations.	a result of climate change), poor river water quality resulting from factors such as inadequate sewage treatment, agricultural enrichment, acidification, erosion and siltation), forestry related pressures and over fishing. Current estimate is less than 10% of wild smolts that go to sea from Irish rivers are surviving. Also concerns relating to mortality at sea from such things as diseases, parasites and marine pollution. Overall conservation status is inadequate.
Otter	The otter (Annex II and IV) is widespread in Irish freshwater and coastal habitats. Main prey include sticklebacks, salmonids, frogs, crayfish and eels.	Some localised reduction in otter habitat quality due mainly to water pollution and clearance of riparian vegetation this has been balanced by reduced occurrence of severe water pollution episodes and reduced river corridor disturbance. Although widespread in Ireland national surveys suggest otter densities have declined since 1980 and therefore conservation status is favourable (Indicating a genuine improvement since 2007)
Sea Lamprey	Sea Lamprey (Annex II) spend their adult life in marine and estuarine waters and migrate up rivers to spawn in areas of clean gravels, after which they die. The young larvae settle in sediment in still water where they burrow and act as filter feeders until transforming into adult fish. They can grow up to 1m in length and widely distributed around the coast.	On some rivers weirs block upstream migration which limits the species to the lower stretches and restricting access to spawning beds. Channel maintenance is a concern, removing silt deposits and gravel shoals used by lampreys. Conservation status is assessed as bad.
River and Brook Lamprey	The river lamprey (Annex II, IV) grow to 30cm and has similar life to the sea lamprey. The brook lamprey (Annex II) is the smallest of the lampreys native to Ireland and the only one which is non-parasitic and spends its life in fresh water. Both are very similar genetically and cannot be distinguished visually.	Brook lamprey appear to be widespread and weirs are less of an issue for river lamprey as for sea lamprey. Conservation status is assessed as favourable conservation status.
Freshwater Pearl Mussel	The sediment and nutrients that enter mussel rivers come from a wide variety of sources (e.g. urban wastewater, development activities, farming and forestry), often well upstream of the location of the mussels. The species can also suffer direct impacts from in-stream works such as channelization, bridge-construction and recreational fishery structures. Ensuring the long-term future of the freshwater pearl mussel requires significant, integrated catchment management to prevent direct	The Overall Status is assessed as Bad and declining, however the prospects may improve for this species.

impacts and to reduce losses of sediment and nutrients from all indirect sources.

5.6.21 Invasive Species

Invasive species are species that have been introduced, generally by human intervention, outside their natural range and whose establishment and spread can threaten native ecosystem structure, function and delivery of services⁵. After habitat loss, invasive species are the second biggest threat to biodiversity. There are ecological and socio-economic impacts as a result of invasive species, the extent of which are likely to increase in the Plan area without an effective management strategy including raising awareness which will inform on identification and how to reduce the risk of introducing and spreading invasive species. The EU adopted “**Regulations on the prevention and management of the introduction and spread of invasive non-native species**” (2013/0307(COD)) came into force on the 1st of January 2015. This regulation seeks to address the problem of invasive species in a comprehensive manner so as to protect native biodiversity and ecosystem services, as well as to minimize and mitigate the human health or economic impacts that these species can have.

The Regulation foresees three types of interventions; prevention, early detection and rapid eradication, and management.

The 2009 Clare Invasive Species Project provides a baseline of the known distribution of invasive species as shown Figure 5.6.7 indicating whether they are high or medium impact invasive species. In addition Figure 5.6.8 provides an indication of the taxon with the data collated from a variety of sources including the National Invasive Species Database, Clare Biological Records Centre dataset, the Flora of County Clare amongst others. This map for the first time shows distinct clusters of invasive species which gives a clear indication of how the species are being transferred or spread throughout the county at an alarming rate. The N68 contains a very distinctive cluster for Japanese Knotweed, *Fallopia japonica* moving from east to west along this route. There are two further clusters north of Tulla and west of Scarriff. Given the principal means of spread is entirely through the deliberate or accidental movement of rhizome fragments or cut stems it is highly likely that the spread along this route is through the cutting of hedgerows or the movement of excavated material either soil or vegetation along the route. Japanese knotweed has an extraordinary ability to spread vegetatively from crown, stem and rhizome (underground root) if disturbed. Even tiny amounts of cut stem, crown or rhizome are capable of producing a new plant. Controlling spread is therefore dependent on preventing the spread of the stem, crown or rhizome. Japanese knotweed can have huge consequences given its key impacts include;

- Excludes native species;
- Dies back in winter leaving river banks vulnerable to erosion;
- Subsequent potential sedimentation impact on fish spawning areas;
- In cases it can damage building foundations;
- Collects litter in urban areas; and
- Can damage hard surfaces by growing through them

⁵ National Biodiversity Data Centre.

5.6.22 Biodiversity Issues and Threats in the Plan area

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

1. A general lack of recognition and appreciation of biodiversity outside of European sites. This is particularly relevant in relation to wildlife corridors and habitats and the role they play in the migration, dispersal and genetic exchange of wild species.
2. There can be an over-reliance on using engineering solutions to environmental problems rather than identifying and assessing alternatives. This is particularly relevant in relation to wetlands and floodplains in the Plan area.
3. Impacts on water quality are a significant threat. The Plan area is rich in wetlands and supports an abundance of water sensitive habitats and species; however, these are at risk from both point source pollution and diffuse pollution, particularly wastewater treatment.
4. Reclamation or development in wetlands and floodplains have already led to significant problems with flooding, and the continuation of this type of activity will further exacerbate issues of clean water supplies, nutrient recycling, flood storage and regulation.
5. The Plan area is particularly important for Lesser Horseshoe Bats, with several designated and non-designated sites. Destruction of roosts, loss or fragmentation of commuting routes, and insensitive development and lighting can negatively impact this species.
6. Habitat loss and fragmentation can occur as a result of development.
7. Disturbance to wildlife, and particularly birds, occur as a result of inappropriately sited development and increased recreational pressure.
8. The loss of key “stepping stones” between European sites which are not afforded the same protection as SACs ad SPAs or as pNHAs or NHAs.
9. Raised bogs are wetland ecosystems and so the main threats to their welfare arise from any actions that drain water from them and dry them out. These include; Drainage of raised bog habitat or surrounding wetland habitats, peat harvesting and turf cutting, planting of commercial forestry, spread of fires, other human activities such as water abstraction from groundwater and quarrying.
10. The spread of invasive alien species is a particularly important threat to local biodiversity as they compete for space and food.
11. Climate change is a transboundary issue affecting the entire globe and is fundamental to social stability and sustainable development. Most greenhouse emissions are related to energy generation, transport, agriculture, and industry sectors. Focus is being put on predicting how a changing climate will impact on some of our most threatened species, for example species at the range limits. Alternative energy options are being explored in the County. A common concern in relation to wind energy developments relates to impacts on peat soils and hydrogeology, impacts on bird species, and habitat disturbance and uniquely to West Clare in particular the effects on the freshwater pearl mussel as an Annex species.
12. In County Clare one of the most prevalent impacts of climate change in recent years has been the increase in flood events. Management of flood-related issues is therefore of critical importance to the future sustainable development of the county.
13. The Planning and Development Act, 2000 (as amended) introduced flood risk assessment into the planning process. This was subsequently augmented by *The Planning System & Flood Risk Management (and Technical Appendices) – Guidelines for Planning Authorities* (DoEHLG & OPW Nov 2009) and by *Circular PL2/2014 (August 2014)*. The aim of the

guidelines is to enable the future sustainable development of areas by ensuring that development proposals are considered and assessed against the risk of flooding. This will avoid development in areas identified as being at risk of flooding, with the consequent potential damage to property and the economy. The Planning Authority will have regard to these guidelines when preparing plans and assessing proposals for future development, including redevelopment, or the extension or intensification of existing uses.

14. As the Fergus is tidal, soft landscapes and low lying lands will be particularly at risk from sea level rise and erosion, and this may become exacerbated due to climate change.

5.6.23 What would happen to biodiversity, flora and fauna without implementation of the Plan?

A wide range of economic and social benefits and services result from the protection of biodiversity, for example, biodiversity forms the basis of our landscapes, provides for food and clean water supplies, opportunities for waste disposal, nutrient recycling, flood storage and regulation and much more. In the absence of the new Plan pressures on natural resources would continue, though the rare or threatened habitats protected under EU and national legislation would continue to be protected.

In the absence of a Clare County Development 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 flora and fauna would be dependent on the rate and extent of any such developments which would take place. There would be no consideration of the inter-connections between such things as climate change and biodiversity and therefore no provisions made to contend with future climate change and how to incorporate mitigation and adaptation measures so as to avoid or minimise significant effects on biodiversity.

Development along or adjacent to the banks of rivers could result in a reduction in ecological connectivity within and between these and other habitats. Pollution of water bodies as a result of any future development along river catchments would be likely to adversely impact aquatic biodiversity and flora and fauna including salmonid species and other species protected under Annex II of the Habitats Directive. Beneficial effects upon biodiversity and flora and fauna which would be likely to arise out of the specific policies and objectives included in the new Plan would not be realised.

In the absence of the Clare County Development Plan 2017-2023, any greenfield development would adversely impact upon biodiversity and flora and fauna by replacing natural or semi natural habitats with artificial surfaces. The significance of such impacts would be dependent on whether such developments would result in the loss of habitats or species of importance as well as the cumulative loss and fragmentation of habitats and species as a result of all Greenfield developments. The Clare County Development Plan 2017-2023 for the county could contribute to development occurring in a planned and sustainable manner, by incorporating ecological protection required by the Habitats Directive within an integrated planning framework for development management of vulnerable

areas, which would not be presented in the absence of a Development Plan, resulting in less effective protection of ecological resources.

5.6.24 Data gaps/difficulties

- While Habitat Mapping is available for a small portion of the Plan area (South Clare See **Figure 5.9**), it is dated and requires re-surveying. In addition, habitat mapping is also required for the entire County in order to better inform the planning process in particular at development management level.
- The trees for preservation GIS layer needs ground truthing to bring it up to date.
- Bat sites have been identified, but not commuting routes.
- Set aside areas of open space specifically for biodiversity are absent in the plan area.
- A general lack of understanding in relation to water, wetlands and flooding in the Plan area. The Plan area is within a karst region, with several protected wetlands, where engineering solutions do not achieve what is needed.
- A lack of local data on invasive species in the Plan area, a lack of understanding in relation to invasive, a lack of recognition of invasive species, and a lack of knowledge of what to do when invasive species are identified.
- Only generic conservation objectives are available for European Sites, fairly basic, and dated, descriptions, and little information relating to how to manage threats from development.
- Uncertainty of what changes will occur within elements of the environment, for example climatic change/events which would have an impact on diversity.

5.6.25 Inter-relationships with Other Environmental Parameters

Bio-diversity has an inter-relationship with all the environmental parameters presented in the following section. There is a significant connection between nature, human health and quality of life.

	PHH	SG	W	ACF	L	CH	MAT	MAW	MAWS	MAWW	MARE
*BFF	√	√	√	√	√	√	√	√	√	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;


5.6.26 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations


When developing and incorporating policies and objectives for biodiversity within the County Development Plan it is important to recognise that biodiversity is inter-related to all the environmental parameters and similarly with the various components within the development Plan, for example with green infrastructure, climate change, landscape etc. As such, recommendations are made as follows:

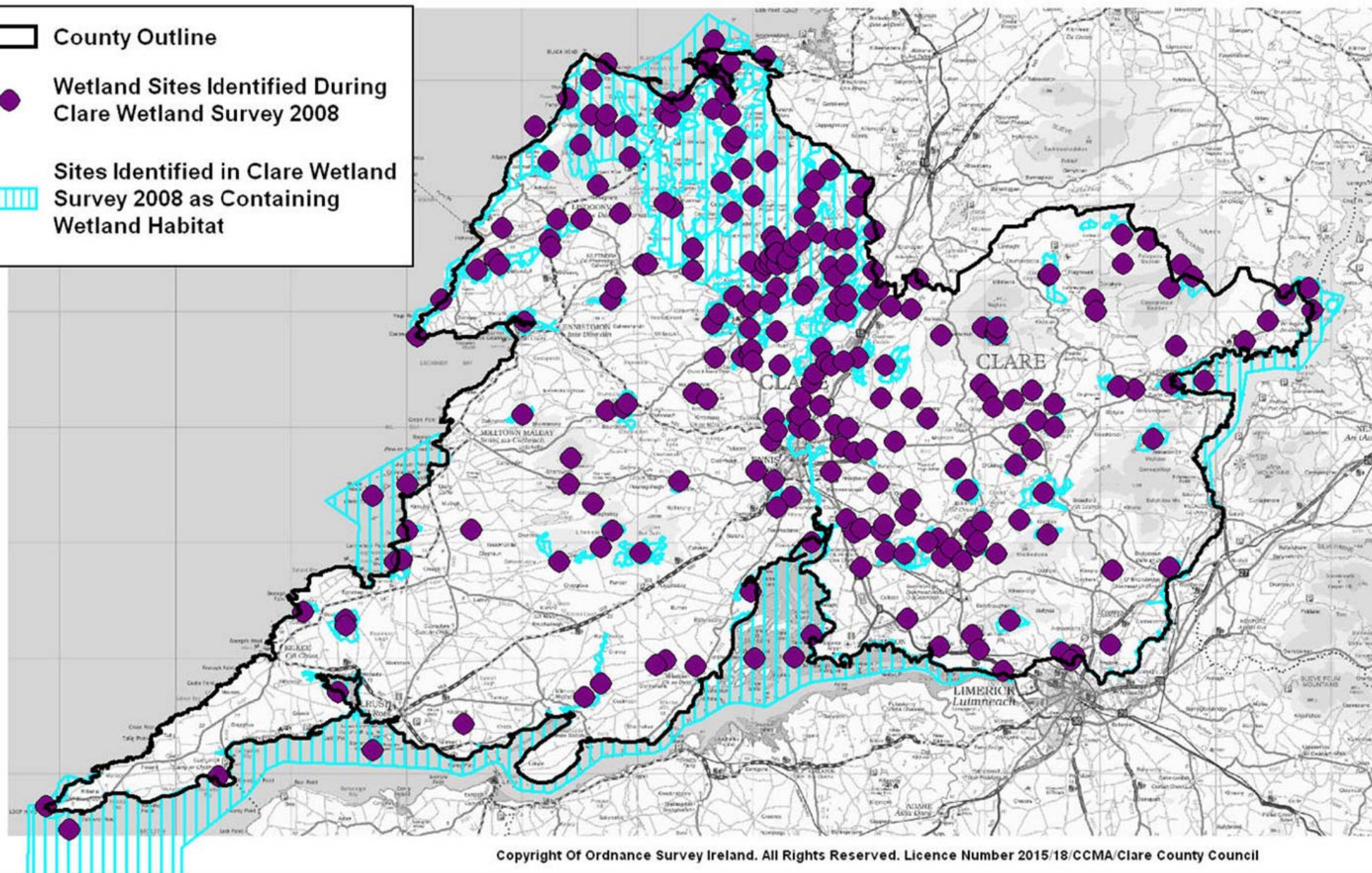
SEA Recommendations – Biodiversity, Flora and Fauna	Inclusion in the Plan
Biodiversity affects and can be affected by different facets of development and the County Development Plan must recognise and achieve its integration within the various components of the Plan and not consider it in isolation.	Yes.
Green Infrastructure should be incorporated as a component of the County Development Plan in its own right, recognising and acknowledging its inter-relationship with such things as social inclusion, sport, recreation, amenity, quality of life, sustainable transport and climate change. Green infrastructure requires clear definition in the Plan, emphasising that at the core of green infrastructure is biodiversity. Without biodiversity there would be no green infrastructure upon which to create and develop networks which present opportunities as referred to above, reinforcing the importance of the protection of biodiversity. The central theme of biodiversity in the context of green infrastructure should not be diluted or lost.	<p>Green Infrastructure has a separate section in Chapter 14, Section 14.4 of Volume 1 of the Written Statement.</p> <p>Additionally Section 4.3.7 Green Infrastructure within Residential Development, Section 6.3.9 Green Infrastructure within Industrial and Enterprise Zones and Section 18.6.3 Green Infrastructure and Flood Management look at the further importance and linkages with green infrastructure in these areas.</p>
Biodiversity and climate change are deeply interconnected. Climate change poses one of the biggest threats to biodiversity and the Plan needs to acknowledge and recognise that climate change is a phenomenon that is on-going and as such the baseline information is going to change over time and the Plan needs to be able to provide for these changes by incorporating resilience into the Plan through adaptation and mitigation measures.	Climate Change and Climate Change adaptation specific objectives have been included in chapter 18 as per objectives 18.1 & 18.2
Include an objective in the Plan in relation to the carrying out of a tree survey for the Plan area to inform future developments, townscape works and planting and replanting proposals.	Yes this has been included as per objective 14.15b.
Include an objective in the Plan which protects and conserves the specific designated sites within the Plan area.	Yes this has been included as per objective 14.2 & 14.3
The promotion of any designated sites for educational, recreational/leisure use it must be an objective that any such activity should not result in a negative impact on water quality and protected habitats and species. The necessary surveys will be required to support this.	Yes.
In an effort to protect and extend wildlife corridors through appropriate boundary treatment, landscaping schemes and planting as part of developments, the Plan should seek to extend the network of wildlife areas within the Plan area.	Yes this has been included as per objective 14.15
The inter-relationship between green infrastructure	Yes this has been included as per objective

and recreation should be acknowledged and an objective included to ensure recreational facilities are integrated into a green infrastructure network.	14.24(e)
Maintain existing and promote additional tree planting and undertake a tree survey to quantify any losses/gains.	Yes this has been included as per objective 14.15
Control of alien invasive species and awareness of the methods by which these can be transferred and spread should be incorporated into the plan. Maintaining an up to date register and mapping of alien invasive species within the Plan area should form part of environmental monitoring.	Yes this has been included as per objective 14.23.

 County Outline

 Wetland Sites Identified During Clare Wetland Survey 2008

 Sites Identified in Clare Wetland Survey 2008 as Containing Wetland Habitat



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.4 Wetland Locations

SCALE: NOT TO SCALE

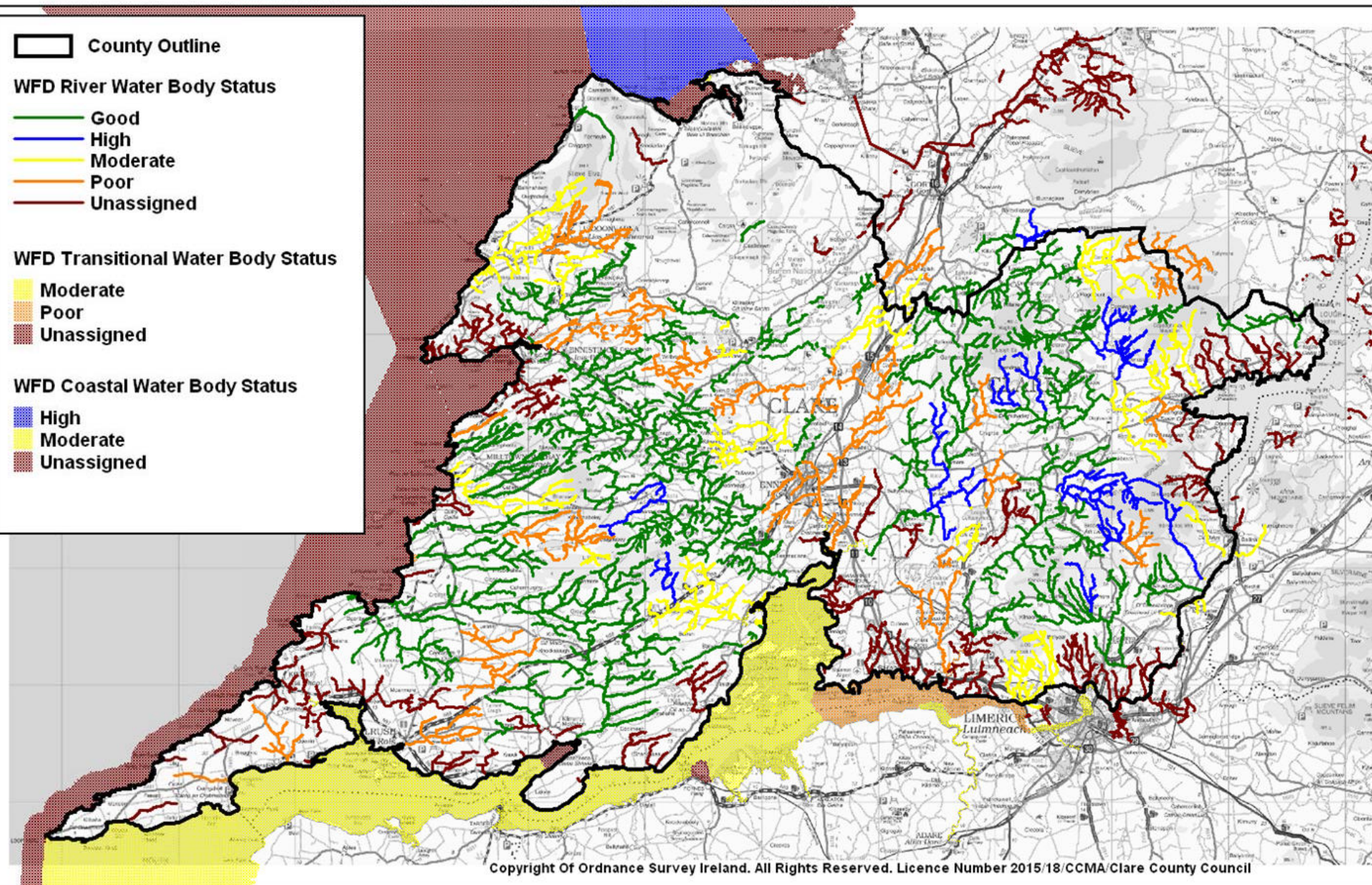
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae an Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.5 Water Framework Directive - River, Transitional and Coastal Water Body Status

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

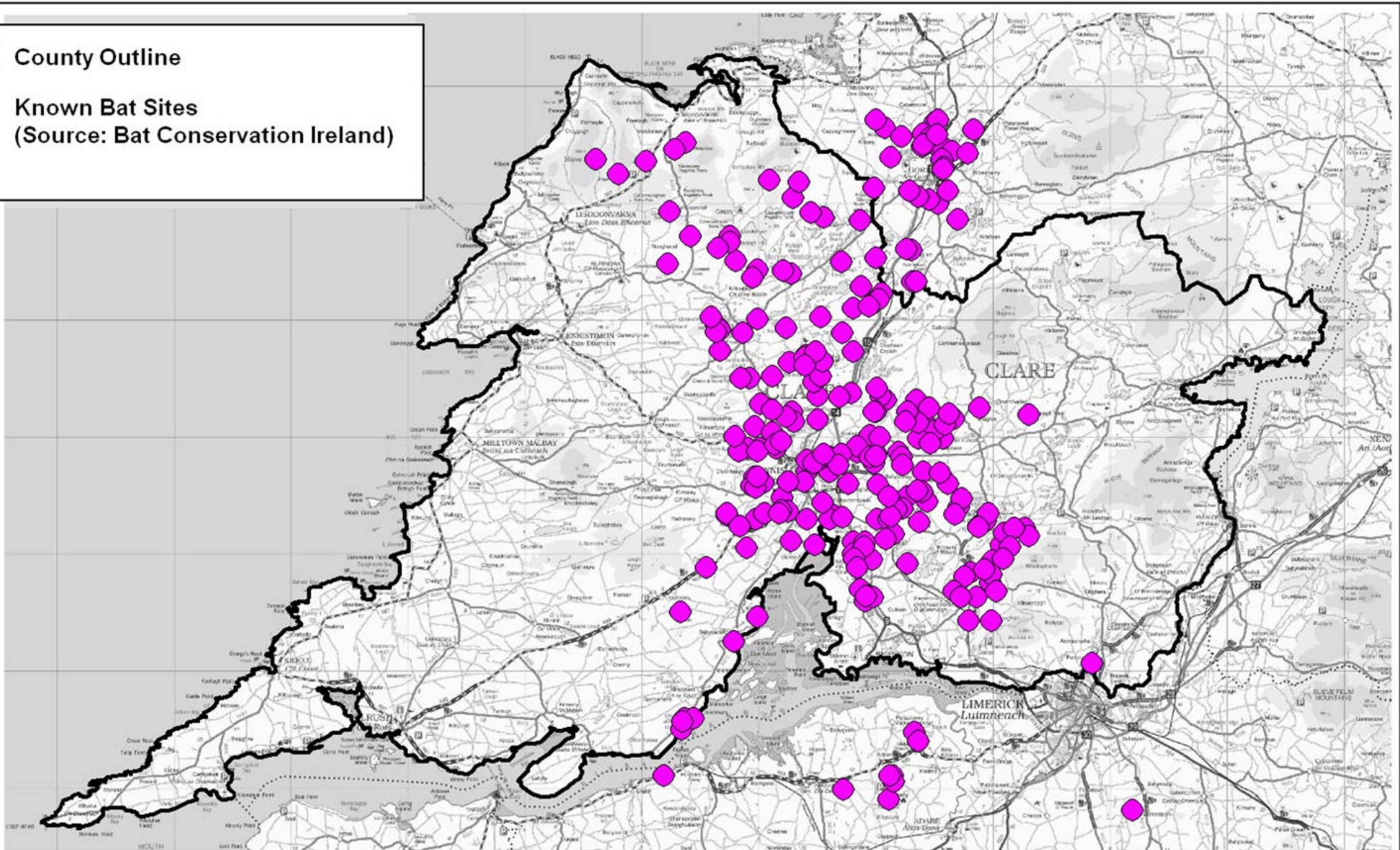
DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes


County Outline


Known Bat Sites
(Source: Bat Conservation Ireland)



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



Clare
County
Council

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.6 Bat Sites

SCALE: NOT TO SCALE




PROJECT NO.

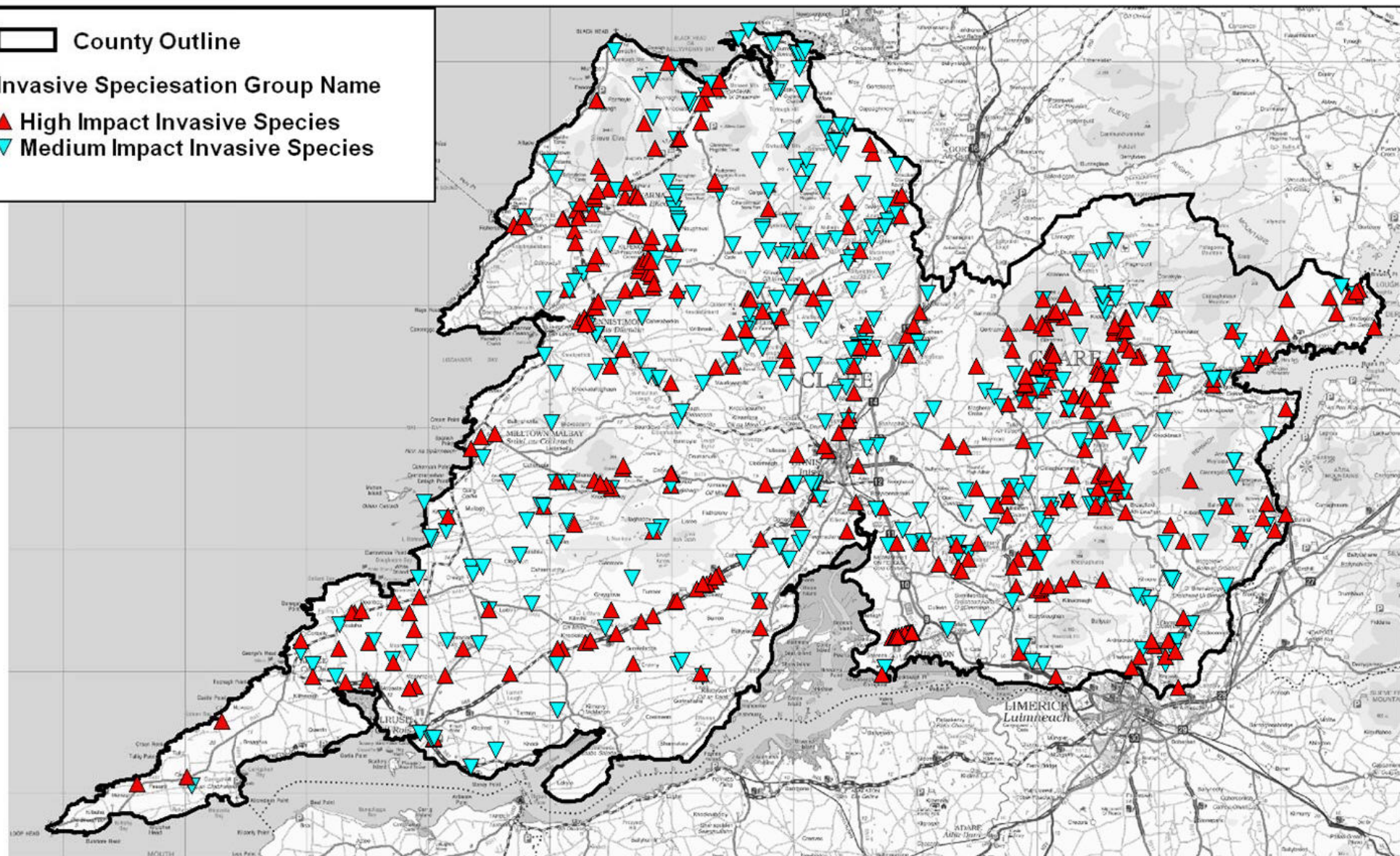
DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

-  County Outline
Invasive Speciesation Group Name
 High Impact Invasive Species
 Medium Impact Invasive Species



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



Comhairle Contae an Chláir
Clare County Council

**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.7 Invasive Species - Group Name

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

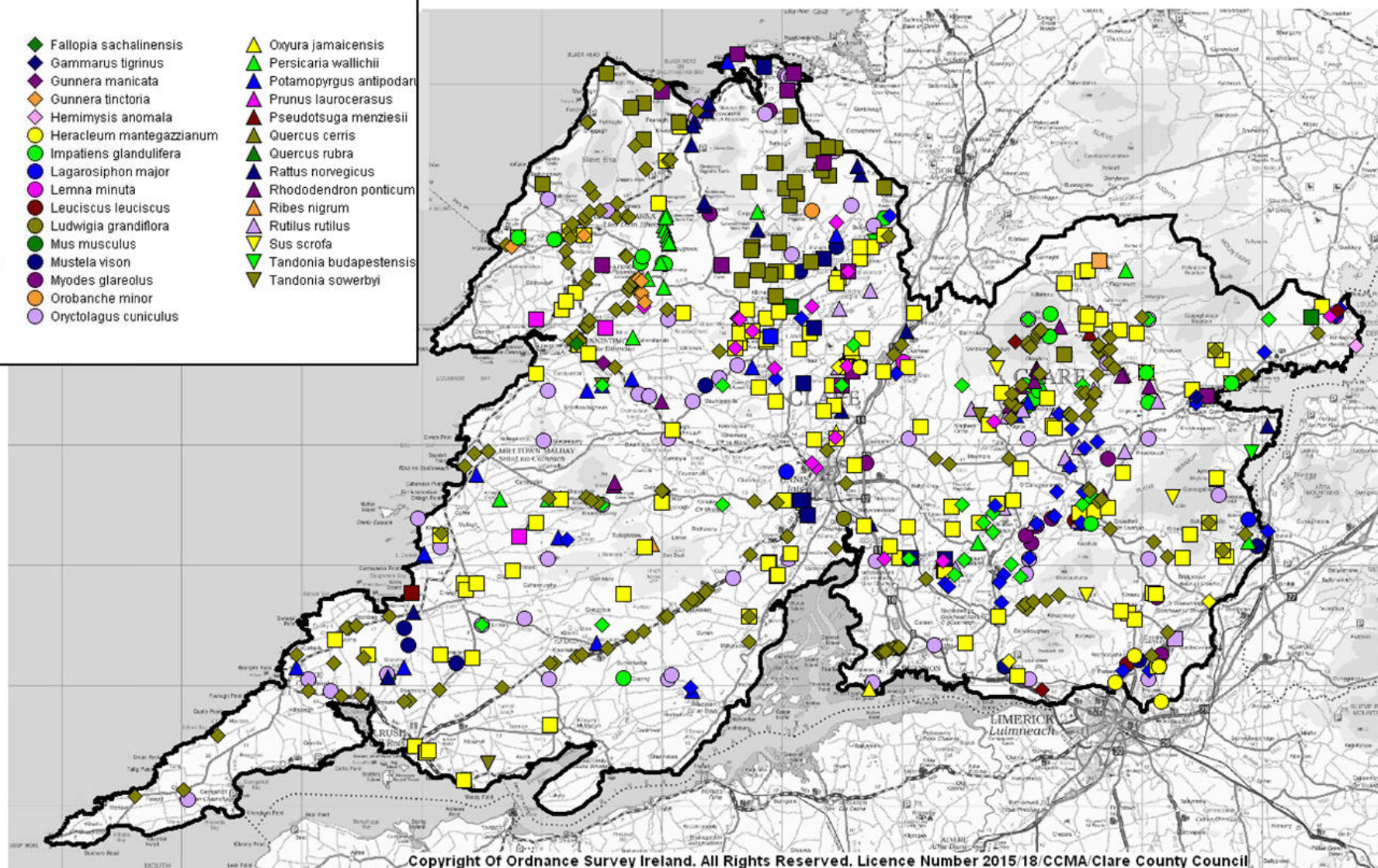
DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

 County Outline

Taxon Name

- | | | |
|--|---|---|
|  <i>Acer pseudoplatanus</i> |  <i>Fallopia sachalinensis</i> |  <i>Oxyura jamaicensis</i> |
|  <i>Branta canadensis</i> |  <i>Gammarus tigrinus</i> |  <i>Potamopyrgus antipodan</i> |
|  <i>Buddleja davidii</i> |  <i>Gunnera manicata</i> |  <i>Prunus laurocerasus</i> |
|  <i>Candidula intersecta</i> |  <i>Gunnera tinctoria</i> |  <i>Pseudotsuga menziesii</i> |
|  <i>Capra hircus</i> |  <i>Hemimysis anomala</i> |  <i>Quercus cerris</i> |
|  <i>Cervus nippon</i> |  <i>Heracleum mantegazzianum</i> |  <i>Quercus rubra</i> |
|  <i>Clematis vitalba</i> |  <i>Impatiens glandulifera</i> |  <i>Rattus norvegicus</i> |
|  <i>Cornu aspersum</i> |  <i>Lagarosiphon major</i> |  <i>Rhododendron ponticum</i> |
|  <i>Cotoneaster horizontalis</i> |  <i>Lemna minuta</i> |  <i>Ribes nigrum</i> |
|  <i>Crocidura russula</i> |  <i>Leuciscus leuciscus</i> |  <i>Rutilus rutilus</i> |
|  <i>Cyprinus carpio</i> |  <i>Ludwigia grandiflora</i> |  <i>Sus scrofa</i> |
|  <i>Dama dama</i> |  <i>Mus musculus</i> |  <i>Tandonia budapestensis</i> |
|  <i>Dreissena (Dreissena) polymorpha</i> |  <i>Mustela vison</i> |  <i>Tandonia sowerbyi</i> |
|  <i>Elodea canadensis</i> |  <i>Myodes glareolus</i> | |
|  <i>Elodea nuttallii</i> |  <i>Orobancha minor</i> | |
|  <i>Fallopia japonica</i> |  <i>Oryctolagus cuniculus</i> | |



Clare
County
Council

Comhairle Contae An Chláir

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.8 Invasive Species - Taxon Name

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

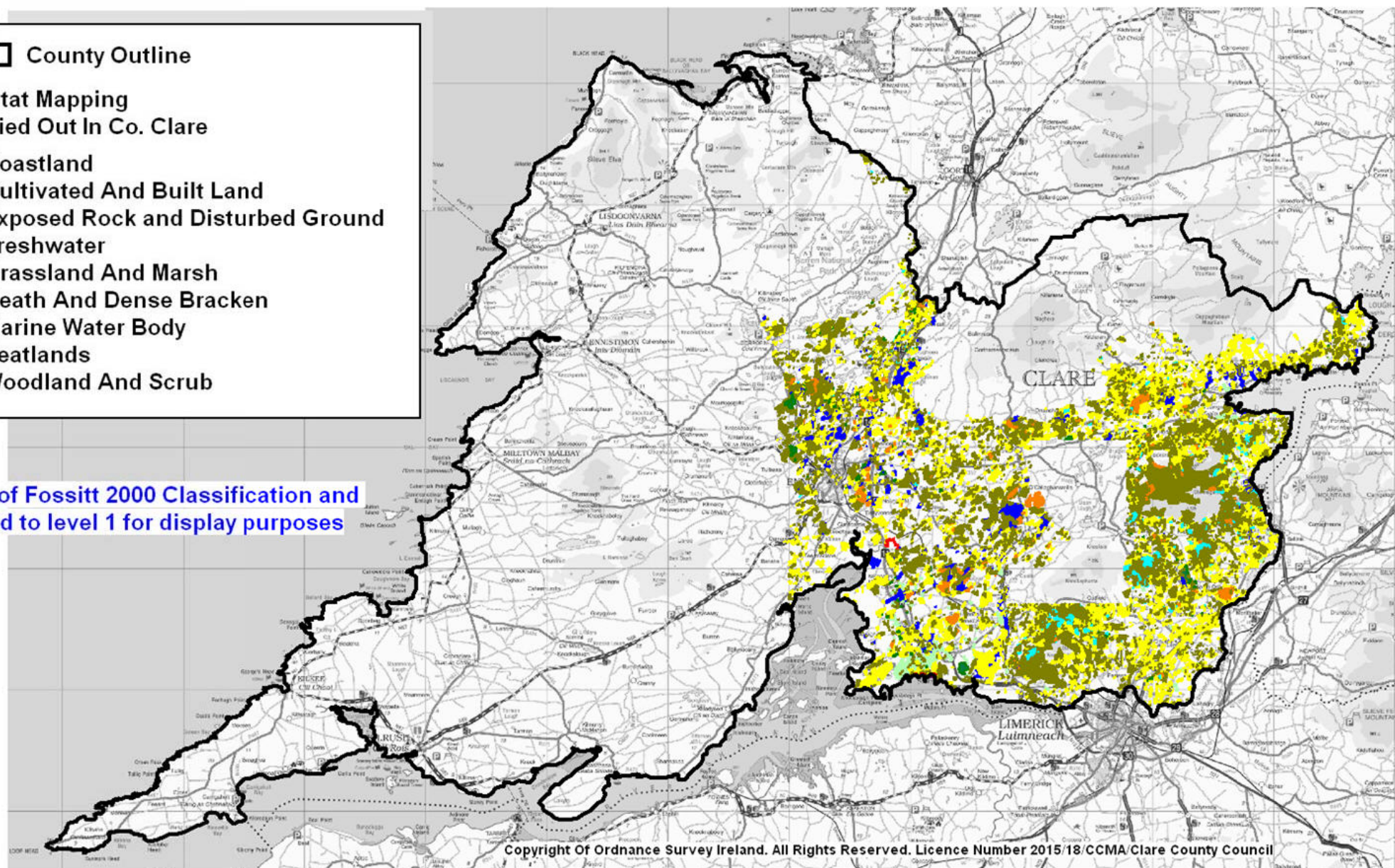
CHECKED:
S. Downes

 County Outline

Habitat Mapping Carried Out In Co. Clare

-  Coastland
-  Cultivated And Built Land
-  Exposed Rock and Disturbed Ground
-  Freshwater
-  Grassland And Marsh
-  Heath And Dense Bracken
-  Marine Water Body
-  Peatlands
-  Woodland And Scrub

Based of Fossitt 2000 Classification and
grouped to level 1 for display purposes



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.6.9 Habitat Mapping

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.7 Population, Human Health and Quality of Life

5.7.1 Introduction

This Section sets out the existing baseline information on Population, Human Health and Quality of Life for the County Development Plan area.

Figure 5.7.1 Mid West Regional Development Zones



Source: Mid West Regional Authority (2010)

The Mid-West Regional Planning Guidelines 2010-2022 give effect, at a regional level, to the national planning framework put forward in the National Spatial Strategy and National Development Plan. The MWRPG's provide a regional framework for the formulation of the policies and strategy in the County Development Plan and seek to ensure the proper balance between the different settlements in the region with regard to development, population and services.

The Guidelines set out an updated regional Settlement Strategy and also set out 'Population Targets' for the region and for each county, including County Clare, which have been formulated having regard to the January 2009 'population targets' issued by the Department of Environment, Heritage and Local Government (DoEHLG) and supplementary guidance of August and October 2009. Furthermore, the Guidelines outline a range of criteria for development plans in the context of population and settlement and identify strategic infrastructure investments for the region.

This regional guidance has directly informed the development of the Settlement Strategy for County Clare. The MWRPGs set out a 'Zone'-based strategy, outlining the development potential and needs

of each zone in turn. The zones relevant to County Clare are 1, 2, 3, and 7, as illustrated in Figure 5.7.1 above.

A brief description of the MWRPG 'Zones' which relate to County Clare are listed below. It should be noted that Zone 1 also includes areas within the region which are outside of County Clare:

Zone 1 Limerick/Ennis/Shannon: This is the core area of the Mid-West Region, which has a high level of population growth, good internal and external accessibility, a large range of social and community facilities, and a strong settlement structure.

Zone 2 West Clare: This zone shows population decline, a poor settlement structure, limited accessibility and a modest level of social and community services. It has, however, significant tourism potential, marine resources and the potential of the Shannon Estuary.

Zone 3 North Clare: This area demonstrates many of the characteristics of Zone 2. It does however have the Burren and high quality land for cattle winterage. While its settlement structure is weak, it must also be considered in the context of Galway and the town of Gort.

Zone 7 North East Clare: This zone contains an area around Scarriff/Tuamgraney with access difficulties as it is a significant distance from all service centres. The area, in time, might be linked to Zone 1, but in the medium term the development of a significant service centre is important. It promotes balanced growth throughout the region to achieve the maximum social, economic, health and cultural benefits for all citizens.

5.7.2 Population

County Clare is split into two main and nine rural areas. They are Ennis Town and Kilrush town; with the rural areas being Ennis Rural Area, Kilrush Rural Areas, Ballyvaughan rural area, Corrofin Rural Area, Ennistymon Rural area, Kiladysert Rural Area, Meelick rural Area, Scarriff rural area and Tulla rural Area. The recorded population for the County in 2002, 2006 and 2011 is presented in **Table 5.7.1**. The county population increased from 110,950 in 2006 to 117,195 in 2011; a growth of 5.63% for that period compared national growth was 8.2% over the same period.

Table 5.7.1 Population Change for Clare Towns and Rural Areas

Census Town	Census Population 2002	Census Population 2006	Percentage increase in population between 2002 and 2006	Census Population 2011	Percentage increase in population between 2006 and 2011
State	3,917,203	4,239,848	+8.2%	4,588,252	+8.2%
County Clare	103,277	110,950	+7.4%	117,196	+5.6%
Ennis Town	18,830	19,998	+6.2%	20,178	0.9%
Ennis Rural Area	26,043	28,766	+10.4%	30,926	+7.5%
Kilrush Town	2,699	2,657	-1.5%	2,539	-4.4%
Kilrush Rural Area	10,344	10,739	+3.8%	10,697	-0.4%
Ballyvaughan	2,622	2,690	+2.6%	2,699	+0.3%

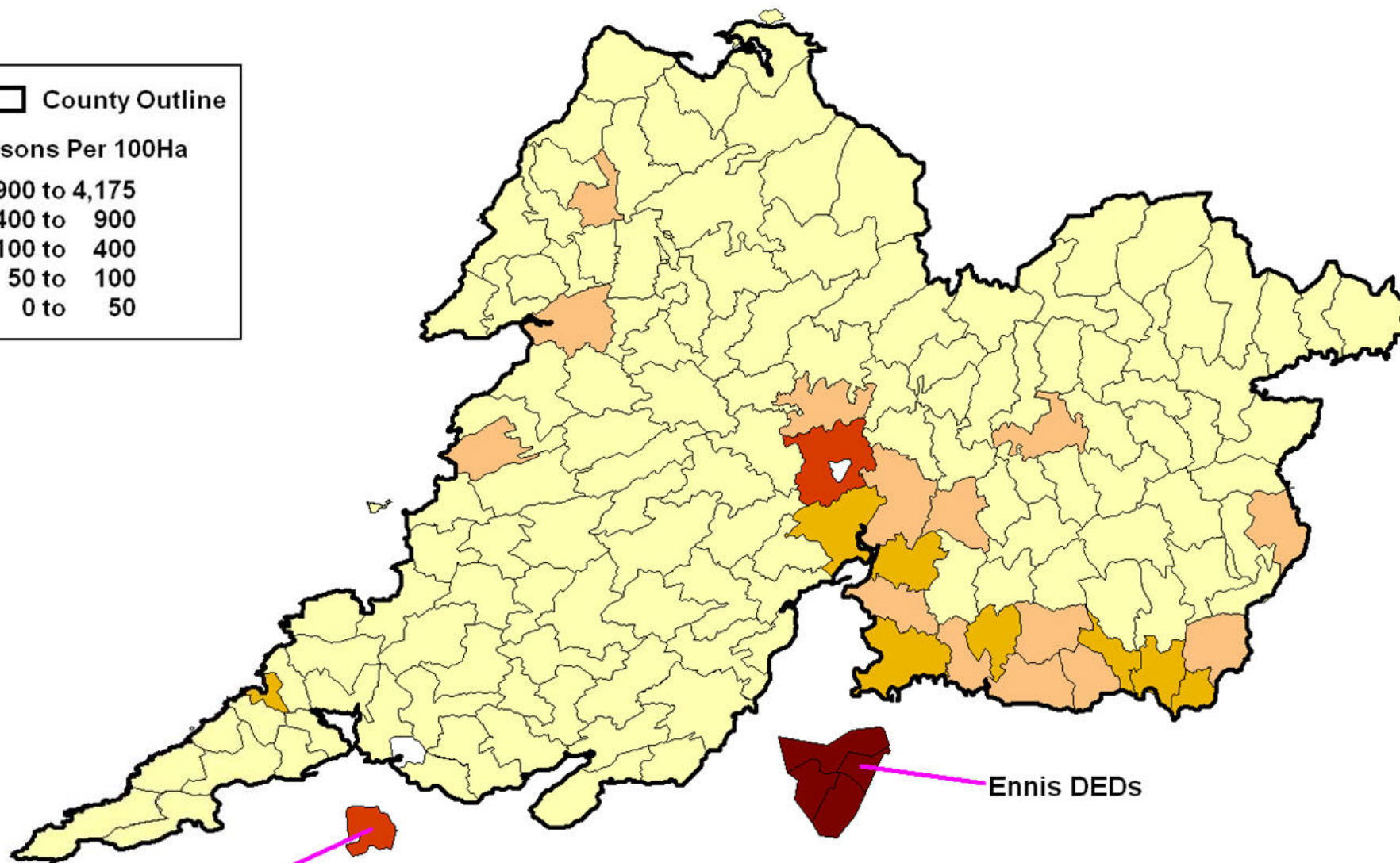
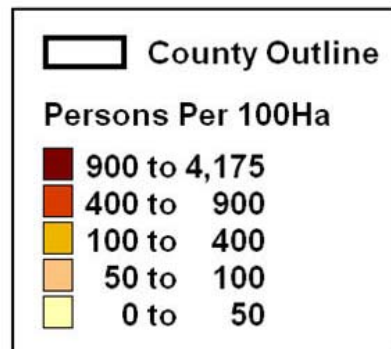
Census Town	Census Population 2002	Census Population 2006	Percentage increase in population between 2002 and 2006	Census Population 2011	Percentage increase in population between 2006 and 2011
Rural Area					
Corrofin Rural Area	3,102	3,309	+6.6%	3,599	+8.7%
Ennistymon Rural Area	9,482	9,792	+3.2%	10,288	+4.4%
Killaydysert Rural Area	4,193	4,502	+7.3%	4,771	+5.9%
Meelick Rural Area	13,548	15,069	+11.2%	16,552	+9.8%
Scarriff Rural Area	6,600	6,747	+2.2%	7,360	+9.0%
Tulla Rural Area	5,814	6,681	14.9%	7,647	+14.4%
Shannon Town	8,224	8,481	+3%	9,673	+14.1%

Source: Census 2002, 2006 and 2011

Kilrush Town was the only area within County Clare which experienced a decrease in population during the period between 2002 and 2006. The same area experienced the largest decrease in population of 4.4% between 2006 and 2011. The Kilrush Rural Area was the only other area within County Clare to record a decrease in population in the 2011 census. The largest population growth within Clare between 2006 and 2011 was in Tulla Rural Area which experienced a population increase of 14.4%.

Under the National Spatial Strategy 2002 – 2020, Ennis is considered a ‘hub town’ and Shannon a ‘linked gateway’. Both represent strategic gateways to the midlands, Ennis in particular, due to its location on the national road and rail network and its capacity for future population growth and employment. **Figure 5.7.1** displays population density within the County and illustrates that Ennis Town has the highest population density. Large and small villages and settlement clusters are also illustrated.

According to the CSO data for 2011, there are a total of 42,648 households within County Clare of which the majority were houses and bungalows as outlined in **Table 5.7.2**. As identified in **Table 5.7.3** there has been a steady increase each year in the number of homes built, with clear peaks during the 1991 to 2000 period and again from 2001 to 2005.



Kirush Urban DED

Ennis DEDs



Clare
County
Council

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.7.2 Population Density By DED

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

Table 5.7.2 Private households by type of accommodation in County Clare

Type of accommodation	Households	Persons
House/Bungalow	39,840	110,109
Flat/Apartment	1,955	3,513
Bed-sit	48	76
Caravan/Mobile home	114	188
Not Stated	691	1,701
Total	43,648	115,587

Source; Census 2011

Table 5.7.3 Permanent private households by year built in County Clare

Year Built	Households	Persons
Pre 1919	4,175	8,949
1919 to 1945	2,435	5,337
1946 to 1960	2,347	5,265
1961 to 1970	3,111	7,349
1971 to 1980	5,721	14,725
1981 to 1990	4,779	14,121
1991 to 2000	6,701	21,364
2001 to 2005	6,929	21,057
2006 or later	4,661	12,888
Total	42,534	115,399

Source; Census 2011

5.7.3 Population Trends and Targets

The County Development Plan adopts an approach to population growth that is linked to the implementation of the National Spatial Strategy. Future populations are expressed as ‘targets’ in the plan to ensure adequate investment in infrastructure, which will help to maintain the county’s economic growth and avoid infrastructural deficits. The MWRPGs have given effect to the national population targets by designating pre-defined population targets at sub-regional, county and service town level. The Clare County Development Plan 2017-2023 must be consistent with the population targets as set out by the Mid-West Regional Planning Guidelines 2010-2022.

Table 5.7.4 sets out the population targets for the years 2016 and 2022 from the Mid-West Regional Planning Guidelines 2010-2022 as they apply to the individual counties in the Mid-West region.

Table 5.7.4 Population Change for Clare Towns and Rural Areas

	2006	Percent 2006	2016	Percent 2016	2022	Percent 2022
Clare	110,950	31%	131,321	31%	141,600	31%
Limerick	124,265	34%	147,081	34%	157,065	34%
City	59,790	17%	70,768	17%	81,240	18%
North Tipperary	66,023	18%	78,145	18%	82,123	18%
Totals	361,028	100%	427,316	100%	462,028	100%

Source: Mid-West Regional Planning Guidelines (2010)

The population targets set out in the MWRPGs cover the period from 2006 to 2022. Clare County Council has directly transposed these target populations into the Clare County Development Plan 2017-2023 and extrapolated the figures to establish the target population for County Clare, the Gateway, Hub and service towns and the remaining areas of the County by the year 2023. This is essential to ensure that adequate lands are made available for residential use to accommodate population growth during the lifetime of this Plan.

Table 5.7.5 specifies the target population for 2023 in the Gateway of Shannon (figures given exclude Limerick area of Gateway), the Hub of Ennis, the Service Towns (Kilrush, Ennistymon and Scariff) and also indicates the target growth in the remainder of each of the zones in County Clare.

Table 5.7.5 Population Targets Breakdown 2023

	Population 2011	Service Towns 2023	Gateway 2023	Hub ² 2023	Remainder of Zone ⁶	Targets 2023
Zone 1	81,514		+2,709	+9,244	+7,874	101,341
SW Clare 2	16,651	+975 ³			+1,928	19,554
NW Clare 3	14,236	+1,125 ⁴			+1,537	16,898
NE Clare 7	4,795	+525 ⁵			+586	5,906
Total	117,196	+2,625	+2,709	+9,244	+11,925	143,699

1 – Shannon
3 – Kilrush
5 – Scariff/Tuamgraney

2 – Ennis
4 – Ennistymon/Lahinch
6 – Remainder of Zone includes total population for the remainder of settlements and rural area

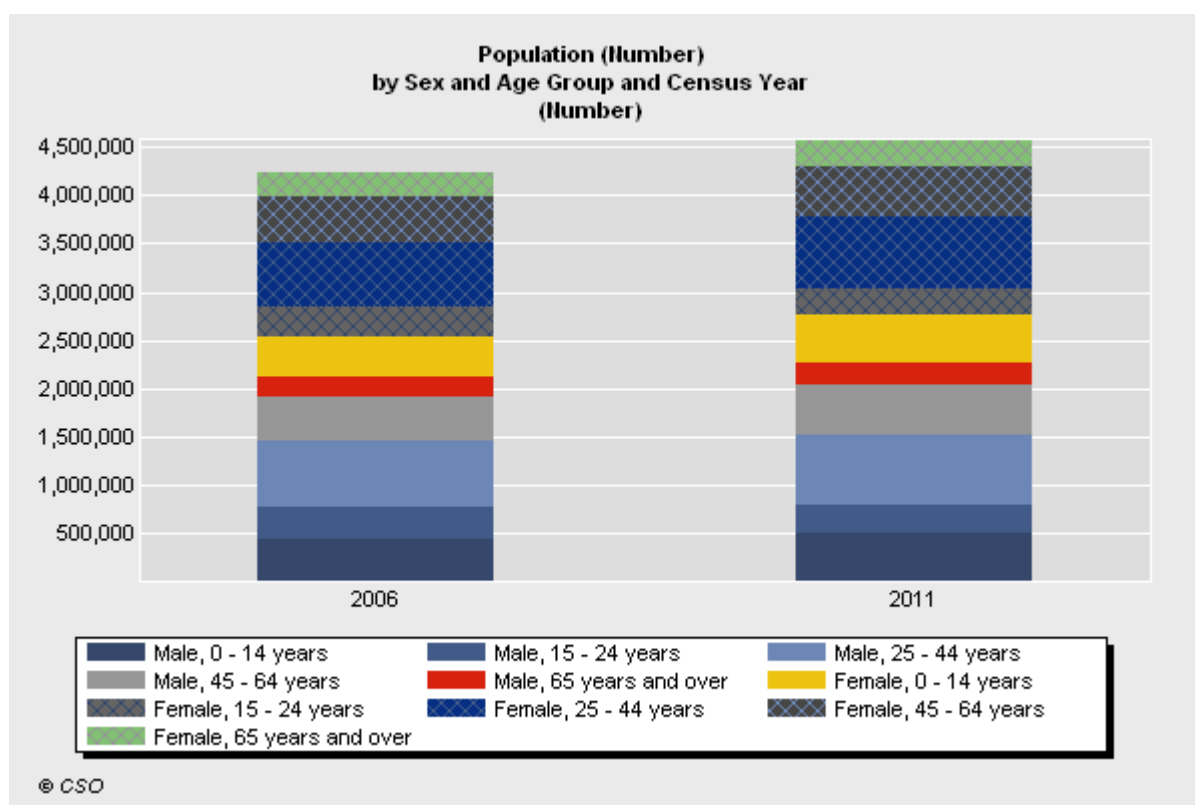
In compliance with the Mid-West Regional Planning Guidelines 2010-2022, and the requirements for a Core Strategy under the Planning and Development Act 2000 (as amended), the Core Strategy as outlined in Chapter 2 of Volume 1 of the County Development Plan sets out the distribution of the target population throughout each of the settlements in County Clare categorised on a zone-by-zone basis as per the Mid-West Regional Planning Guidelines. This element of the Core Strategy sets out

the policy framework to secure a strategic evidenced-based approach to the location, quantum and phasing of zoned lands throughout the County.

5.7.4 Age Profile

The bar chart in **Figure 5.7.3** shows the age structure of the County population male and female as recorded on Census Night 2011 and compares it to 2006. Clare has a large percentage of its population for both males and females in the 25-44 age groups category. While the total of both sexes have increased over the census period there are more females than males living in County Clare in 2011.

Figure 5.7.3 Clare Age Profile 2006 – 2011



Source: *Central Statistics Office 2006 – 2011*

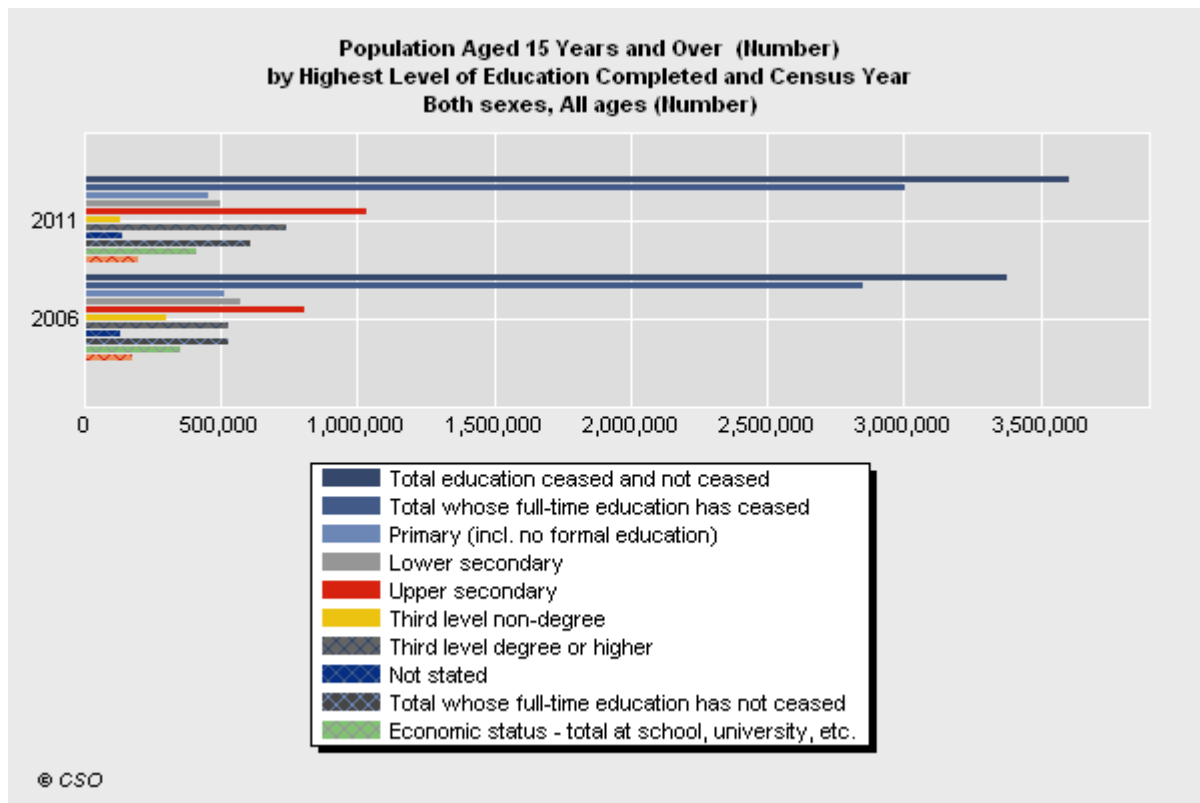
The 0-14 age groups have collectively seen an 11.3% increase since 2006. Age dependency shows the ratio of the old and young population to the population of working age. The young dependency ratio is the number of young people aged 0 -14 as a percentage of the population of working age.

5.7.5 Education Profile

Figure 5.7.4 identifies the population aged 15 years and over by highest level of education completed. From an analysis of these figures, Clare has seen an increase in the number who are progressing to completion of upper secondary education or higher when compared with 2006 coupled with third level education and other forms of continued further education. This reflects the changes which took place during the down turn in the economy with fewer jobs and opportunities arising and therefore the return to education for a greater proportion of the population. It also

reflects the changing nature of industry in requiring a higher level of skill and education for its workforce and the competitive nature of the jobs market which now requires graduates at the highest level of education.

Figure 5.7.4 Population aged 15 years and over by highest level of education completed



Source: Central Statistics Office 2011

5.7.6 Employment & Economy

The 2011 Census figures (**Table 5.7.6**) showed that 78% of the total population aged 15 years and over in county Clare were at work which remains the same with no percentage change since the 2006 Census, reflective of the economic downturn in recent years. Labour force participation measures the percentage of all people aged 15 or over who are available to work, that is either at work or unemployed and the participation rate was 48% for County Clare in 2011 increasing only very slightly by 1% since 2006. The unemployment rate based on a principal economic status basis measures the percentage of people in the labour force who were either looking for their first job or unemployed. The unemployment rate for Clare (taking the principal economic status classes; Unemployed looking for first regular job & Unemployed having lost or given up previous job) stood at 8.9% in the 2011 Census, a large increase from 3.7% in 2006.

Table 5.7.6 Population aged 15 years and over by principal economic status and sex.

Principal Economic Status	Male	Female	Total
All persons aged 15 years and over	45,137	45,978	91,115

All persons aged 15 years and over in labour force	31,170	24,978	56,148
Persons at work	24,388	21,218	45,606
Employer or own account worker	7,538	2,007	9,545
Employee	16,786	19,105	35,891
Assisting relative	64	106	170
Unemployed looking for first regular job	438	299	737
Unemployed having lost or given up previous job	6,344	3,461	9,805
Student or pupil	4,890	5,154	10,044
Looking after home/family	562	7,914	8,476
Retired	6,594	5,936	12,530
Unable to work due to permanent sickness or disability	1,788	1,814	3,602
Other economic status	133	182	315
All persons aged 15 years and over not in labour force	13,967	21,000	34,967
Total	159,529	159,152	318,681

Source: Central Statistics Office 2011

The key economic sector in Clare accounting for 20 per cent of the working population of County Clare was in the non manual sector. This was followed by those in the employer and managers economic group. Lower Professional is also very important in the county accounting for a further 13% of the work force. While the Agriculture, forestry and fishing sector has increased slightly since 2006 it still has relatively low numbers reflecting a rural county with a lack of investment in this sector.

Table 5.7.7 Persons at work by industry and sex

<i>Population (Number) by Province County or City, Sex, Socio Economic Group and Year</i>			
2011		2011	
<i>Male</i>		<i>Female</i>	
A. Employers and managers	9,103	A. Employers and managers	7,772
B. Higher professional	3,650	B. Higher professional	3,061
C. Lower professional	5,767	C. Lower professional	9,277
D. Non-manual	7,874	D. Non-manual	15,182
E. Manual skilled	7,489	E. Manual skilled	2,669
F. Semi-skilled	4,919	F. Semi-skilled	4,103
G. Unskilled	1,982	G. Unskilled	1,341
H. Own account workers	3,550	H. Own account workers	1,950
I. Farmers	5,064	I. Farmers	2,435
J. Agricultural workers	246	J. Agricultural workers	100
Z. All others gainfully occupied and unknown	8,654	Z. All others gainfully occupied and unknown	11,008
Totals	58,298	Totals	58,898

Source: Central Statistics Office 2011

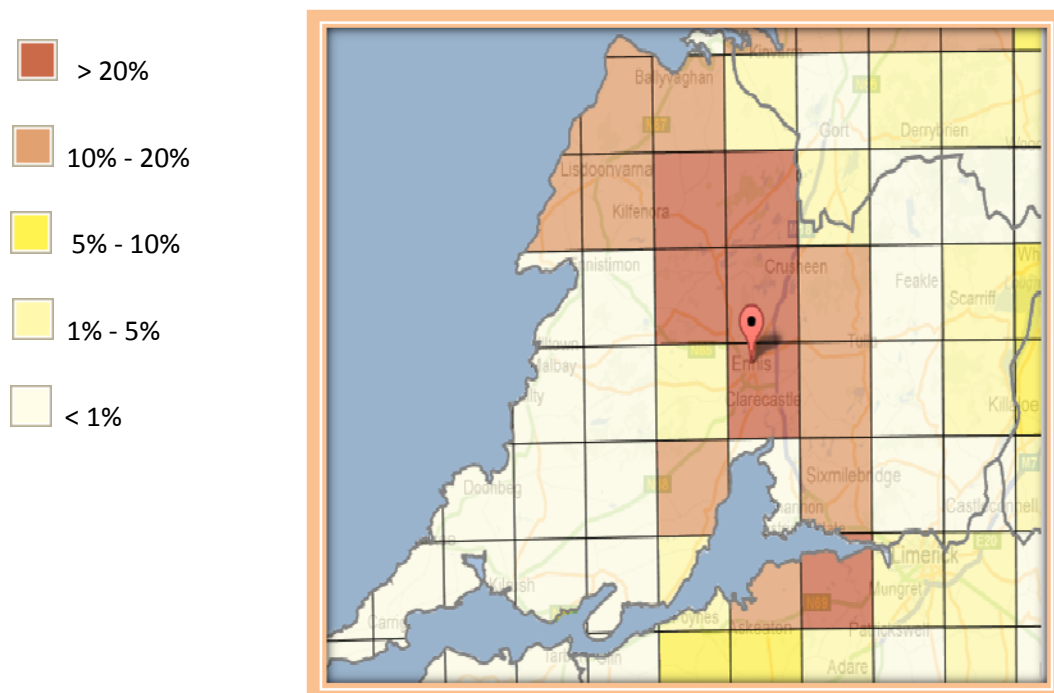
5.7.7 Human Health and Quality of Life

The cumulative effects of population change can impact on human health and quality of life. Direct effects relate to matters such as water and air quality, noise, and landscape change. Indirect effects relate to such matters as flora and fauna. Issues relating to radon and noise are mentioned here and associated effects of transport, material assets, air quality and climate change are discussed in more detail in the relevant sections.

Radon

Radon levels in the County have been collated from the Radiological Protection Institute of Ireland. The estimated percentage of homes above the Reference Level is indicated on **Figure 5.6.5** as per the associated legend. As evidenced, the central portion of the development Plan Area is situated in a high radon area. A High Radon Area is any area where it is predicted that 10% or more of homes will exceed the Reference Level of 200 Bq/m³.

Figure 5.7.5 Estimated Percentage of Homes above the Reference Level in Co. Clare



Source: Radiological Protection Institute of Ireland 2012

Noise

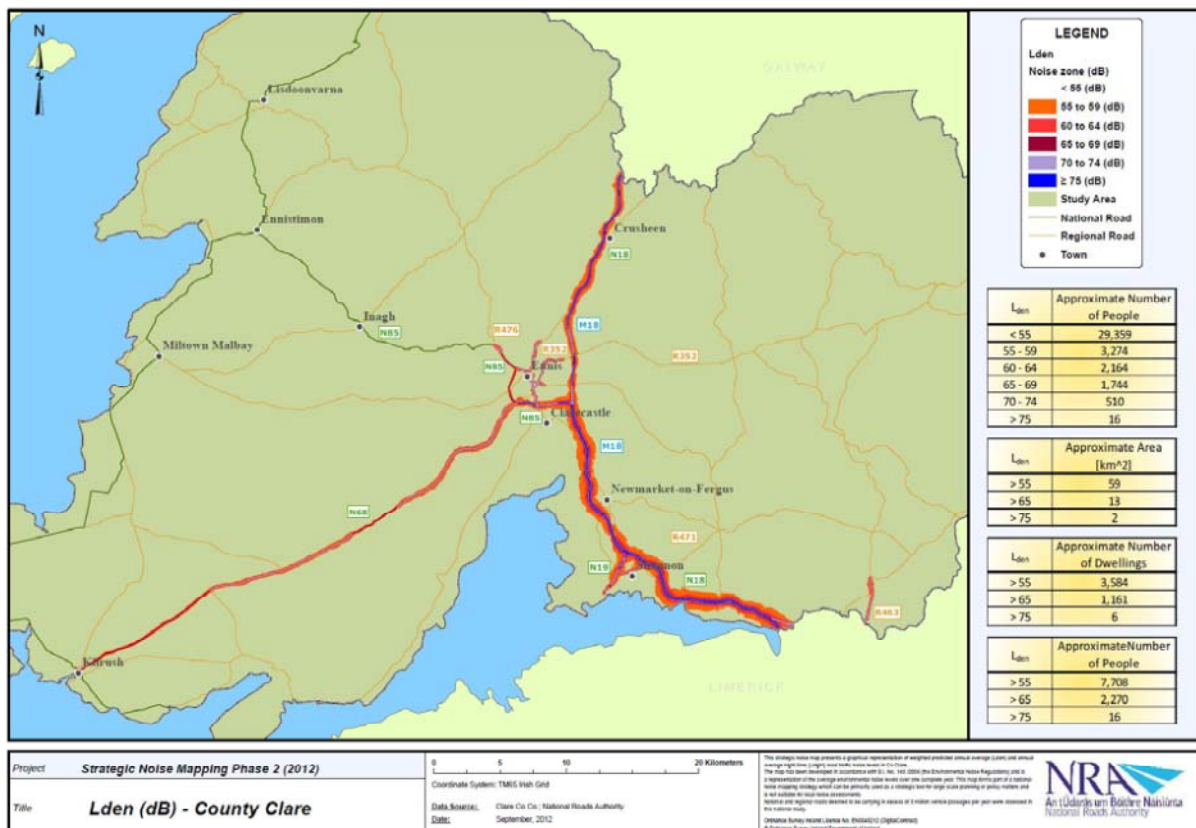
Noise can have a significant effect on an individual's quality of life. Urban areas generally experience a higher level of background noise caused by traffic from roads, junctions or congestion, other transport facilities and routes e.g. bus, train and air; industrial areas due to their operating activity and/or traffic movements they generate in terms of their workforce, deliveries etc; late night activities and uses in neighbourhood centres e.g. late night take-aways and late night deliveries; construction activities on development sites etc.

In response to the requirement of the EU Directive 2002/49/EC a Clare Noise Action Plan 2013 was prepared for the assessment and management of environmental noise. The objectives of the Plan are to avoid, prevent and reduce, where necessary, on a prioritised basis the harmful effects, including annoyance, due to long term exposure to environmental noise. Protection of the future noise environment may be achieved by acoustical planning, which further incorporates noise into the planning process via measures such as land-use planning, sound insulation measures, traffic planning and control of environmental noise sources.

Noise within the Plan area is dominated by that generated by road traffic, in particular the M18, N85 and the R458 (Old Limerick to Galway Road). Since the construction of the M18 traffic generated noise levels along the old national routes within the urban area has decreased. The level of environmental noise generated by road traffic is dependent on a range of factors including the number of vehicles, the speed of vehicles, the road surface and the incline. The extent to which noise travels from the road is affected mainly by distance, weather, presence of acoustic barriers, buildings, roads width, road incline, topography and vehicle noise.

A general overview of the noise climate in County Clare can be obtained through examination of the strategic noise mapping undertaken by the National Roads Authority and available on their web-site. This was completed as a requirement under the Environmental Noise Regulations 2006 (SI 140 of 2006). The results of this noise mapping show that ambient noise levels in the area mostly range from 50-55dB L den in areas situated away from roads. This would indicate levels typical of that found in semi-rural or suburban environments where no major road networks are present. The NRA noise mapping for county Clare is shown in **Figure 5.7.6**.

Figure 5.7.6 Noise Mapping for County Clare

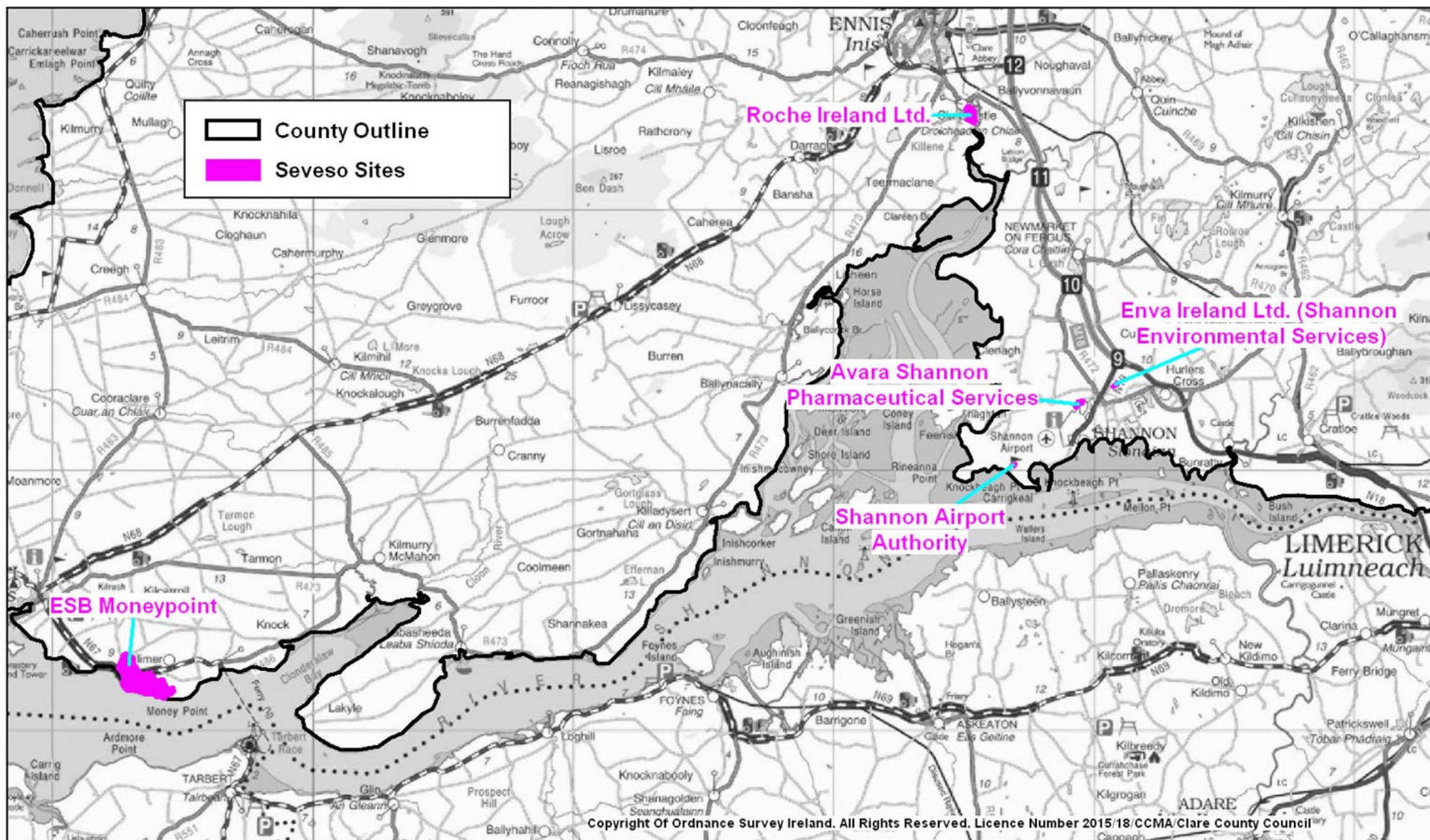


Another source of noise is Shannon Airport, though this is localised and predominately throughout the day time hours.

The reopening of a number of railway stops and the connection of the railway line from Ennis to Galway has also led to additional noise levels in particular through various settlements such as Cratloe, Sixmilebridge, Ennis and Crusheen. Given the type of commuter train largely used on this line noise levels are minimal causing little disturbance.

Seveso Sites

Seveso sites are those which store significant amounts of dangerous or harmful substances and proximity to these sites could represent a potential impact to human health. They are regulated under the COMAH regulations (Control of Major Accident Hazards Involving Dangerous Substances; S.I.476 of 2000). There are five Seveso site in County Clare, two Upper Tier sites and three Lower Tier Sites (representing thresholds of 50 and 200 tonnes respectively). These five sites and their locations are given in the following table and illustrated in **Figure 5.7.7**.



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.7.7 Seveso Sites

SCALE: NOT TO SCALE

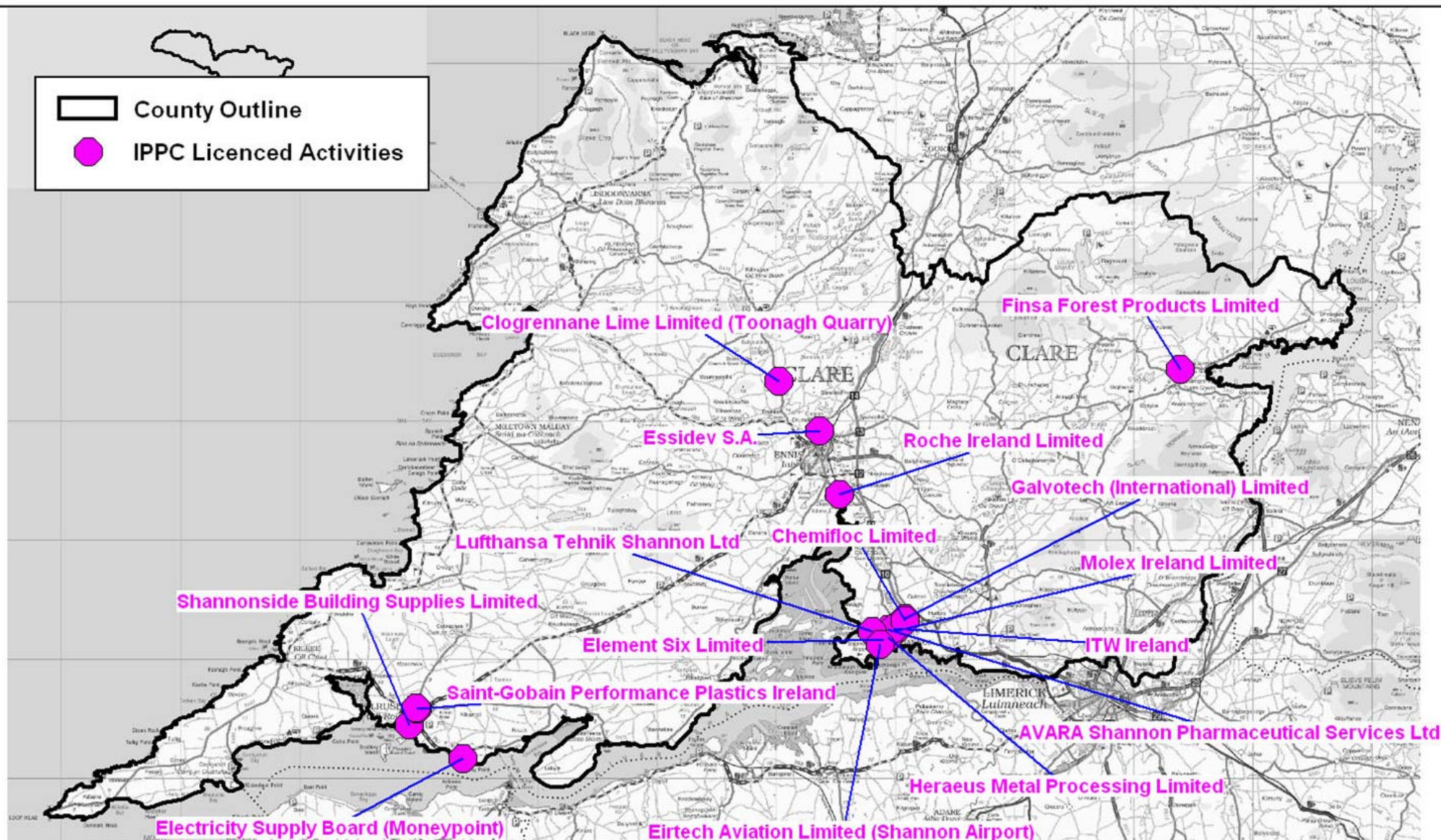
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.7.8 IPPC Licenced Activities

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

Establishment Name	Establishment Address
Upper Tier Sites	
ESB Moneypoint Generating Station	Kilrush, Co. Clare
Shannon Aviation Fuels	Aer Rianta Fuel Farm, Shannon Airport, Shannon, Co. Clare
Lower Tier Sites	
Enva Ireland Ltd (t/a Enva)	Smithstown Industrial Estate, Shannon, Co. Clare
Roche Ireland Ltd	Clarecastle, Co. Clare
UCB Manufacturing Ireland Ltd	Shannon Industrial estate, Shannon, Co. Clare

Table 5.7.8 Seveso sites in County Clare

Integrated Pollution Prevention and Control License

A system of Integrated Pollution Prevention and Control (IPPC) licensing came into effect in Ireland on 12 July 2004. The primary aims of IPPC licensing are to prevent or reduce emissions to air, water and land, to reduce waste and to use energy efficiently. The IPPC system replaced Integrated Pollution Control (IPC) as the licensing regime applicable to certain industrial activities in Ireland. It is a single integrated license which covers all emissions from the facility and its environmental management. There are 15 IPPC facilities in the Plan area as outlined in Table 5.7.9 and shown in Figure 5.7.8

Facility	IPPC No.	Location	Principle Activity
Roche Ireland Limited	P0012-04	Clarecastle, Co. Clare	Chemicals
Chemifloc (International) Limited	P0076-01	Smithstown Industrial Estate, Shannon, Co. Clare, Clare.	Chemicals
UCB Manufacturing Ireland Limited	P0020-02	Shannon Free Zone, Shannon, County Clare, Clare.	Chemicals
Finsa Forest Products Limited	P0022-02	Scarriff, Co. Clare	Wood, Paper, Textiles and Leather
Essidev S.A	P0061-03	Gort Road, Industrial Estate, Ennis, Co. Clare	Chemicals
Shannon Aerospace Limited	P0069-02	Shannon Airport, Shannon, Co. Clare	Surface Coating
Devcon Limited	P0072-03	Shannon Industrial Estate, Shannon, Co. Clare	Chemicals
Saint-Gobain Performance Plastics Ireland	P0096-02	Kilrush, co. Clare	Surface Coating
Broderick Manufacturing Limited T/A Kilrush Trading	P0263-01	Cooraclare Road, Kilrush, Co Clare.	Surface Coating
Heraeus Metal Processing Limited	P0145-01	No. 75, Shannon Industrial estate, Shannon, Co. Clare	Metals
Molex Ireland Limited	P0288-02	Shannon Industrial Estate, Shannon, Co. Clare	Surface Coating
Galvotech (International) Limited	P0292-01	Smithstown Industrial Estate, Shannon, Co. Clare	Surface Coating
Shannonside Building Supplies Limited	P0319-01	Fort road, Kilrush, Co. Clare	Wood, paper, textiles, leather
Lufthansa Technik Painting	P0497-	Shannon Airport, Shannon,	Surface coating

Shannon Limited	02	county Clare	
Element Six	P0533-01	Bay 371, Shannon Industrial Estate, Shannon, co. Clare	Mineral Fibres and Glass
Electricity Supply board (Moneypoint)	P0605-02	Moneypoint Generating Station, Killimer, Kilrush, Co. Clare	Energy
Clogrennane Lime Limited	P0771-01	Toonagh Quarry, Ennis, Co. Clare	The production of lime in a kiln.

Table 5.7.9 IPPC licenced Activities in County Clare

Pollutant Release and Transfer Register

This is an emissions register, the purpose of which is to fulfil the requirements of the Aarhus Convention, as a simple means of affording access to information about environmental emissions and transfers. The register provides a publicly accessible and searchable database which members of the public can use to search for installations which are releasing PRTR pollutants in excess of specific thresholds or making off-site transfers of waste above specified thresholds for non-hazardous and hazardous wastes. There are two licensed PRTR facilities within the Plan area (**Figure 5.7.8**) - Roche Ireland Ltd in Clarecastle and Essidev S.A. in the Gort Road Industrial Estate.

Climate Change, Flooding and Human Health

The potential impacts of climate change on human health can materialise in a number of ways. Direct impacts can result from prolonged periods of hot or cold weather which can lead to heat and cold stresses and their associated effects. Milder winters may lead to lower fuel consumption and few cold related deaths and higher summer temperatures may lead to more heat stress related cases. Severe icy/flood conditions can affect the provision of critical, emergency and/or transport services. Indirect effects on human health may also increase as a result of the effects of extreme weather events on other environmental parameters, for example water quality, which are addressed under the respective sections of this chapter.

The Natural Environment, Human Health and Quality of Life

Exposure to the natural environment can have significant positive benefits on human well-being. Experiencing and connecting with nature through the many resources available, from town parks to national parks and everything in between. The experiences gained from it stimulate senses and emotions which contribute to an overall sense of well-being. The protection, management and accessibility of our natural environment therefore has to be a central component in the future planning for a healthy population.

5.7.8 Issues and Threats

The County of Clare has experienced ever increasing development pressures, but a changing economic climate over recent years has resulted in a slowdown in this regard. This in turn presents challenges for the future in relation to the retention of the younger age cohorts within the area and encouraging those who work within the area to also live within it and to encourage additional employment opportunities within the Plan area to avoid a trend of further outward movement from the Plan area in pursuit of employment.

The population of Ennis increased by 4.6% since 2006 and compared with other Hub towns it has seen one of the lowest increases. Of concern is the significantly higher growth seen in the environs which has greater environmental implications.

The unemployment rate in Ennis stands at 21.5% (Census 2011). In order to avoid continued losses there must be a pro-active approach to encourage the existing population of the area to remain by providing employment opportunities, services and resources which will benefit the entire county. There is a need to provide sustainable alternative employment options for the people of Clare.

Pressure on the existing wastewater infrastructure and water supply and the capacity for it to accommodate growth within each of the settlement areas for residential and employment uses is a significant issue across the county. The same concern exists in relation to water quality and the risk of contamination from the proliferation of individual waste water treatment units and risk of contamination from oil tank leakages from those located in areas of high groundwater vulnerability across the county.

5.7.9 Data Gaps/difficulties

Human health data for the Plan area is not easily available. However, impacts on human health and quality of life may be derived from any of the environmental parameters. Ultimately, all of the effects of a development on the environment impinge upon human beings and their quality of life, both positively and negatively. Direct effects relate to matters such as water and air quality, noise, and landscape change. Indirect effects relate to such matters as flora and fauna. Accordingly, the topic of human beings and their quality of life are addressed in this Environmental Report by means of an appraisal of the indirect effects of the Plan on the other environment parameters, of which human beings and their quality of life are an integral part. Where appropriate, mitigation measures to reduce/avoid adverse impacts are identified and incorporated into this Report and the Plan under the other environmental parameters.

5.7.10 Effects of Not Implementing the Plan

In the absence of the Clare County Development there would not be a localised framework within which to regulate, aid and/or control development whether economic, social or environmental. A lack of controlled development could lead to pressure on adequate service provisions and infrastructural facilities, thus affecting the natural environment in which the population lives leading to human health and quality of life issues. In the absence of an agreed target population and appropriate zoning of settlement land all of the environmental parameters would be adversely affected to varying degrees.

In the absence of the Plan, the process for assessing the issues which affect all of the inhabitants within the Plan area will go unchecked, resulting in deterioration in the environment and lack of critical capital expenditure in terms of targeted infrastructural development and employment opportunities. The required population target will not be provided for by an adequate level of service provisions and the environmental consequences would be both deleterious and undesirable.

In order to properly plan for the sustainable development of the Plan area, it is essential to be aware of the population for whom the Plan area will cater. The assigned target population of 31,956 to 2020 must be taken into account when formulating objectives and policies for the settlements in the

Plan area. In assessing demographic projections, cognisance has been taken of the impact of population projections on housing, education and workforce. In the absence of the Plan, Core Strategy and population targets; infrastructure, including services and housing provision would not be catered for accurately. Issues affecting the current population in addition to the population increase may not be realised and could result in deterioration of the environment and mismanaged resources.

However, considerable environmental protection would remain due to the implementation of the Clare County Development Plan 2011-2017 and its policies and objectives relating to the environment.

5.7.11 Inter-relationship/actions with other environmental parameters

Issues relating to population, human health and quality of life are inter-related with all the environmental parameters and this is reflected by their consideration within the baseline for each one within this chapter.

	BF	SG	W	ACF	L	CH	MAT	MAW	MAWS	MAWW	MARE
*PHH	√	√	√	√	√	√	√	√	√	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;

5.7.12 SEA Recommendations*

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Population, Human Health and Quality of Life	Inclusion in Plan
A definition for social inclusion should be included within the Plan, which should read as “Social inclusion refers to a series of positive actions to achieve equality of access to services and goods, to assist all individuals to participation in their community and society, to encourage the contribution of all persons to social and cultural life and to be aware of and to challenge all forms of discrimination. Social inclusion seeks the creation of an inclusive and fair society, combating inequality, social exclusion and poverty”.	Yes this is undertaken in section 5.3.3 of Chapter 5.
An integrated approach to the future growth of the Plan area, which incorporates resilience to climate change through the implementation of the necessary mitigation and adaptation measures, needs to be adopted to ensure that it provides for a local population that can grow in a safe and healthy environment with the opportunities to live and work within reasonable distance and have access to community needs and services. In doing so to	Yes this is done through the inclusion of specific Climate Change and Climate Change Adaptation measures.

minimise impacts on human health, maintain and improve quality of life through the protection of all facets of the environment, for example in provision of adequate infrastructure, flood management, sustainable transport, provision of necessary health services, building design etc.	
Where residential developments are to be located near or adjacent to a major road, any scheme should incorporate acoustical planning in the design, e.g. an integrated buffer to allow for sound minimisation to be provided through planting and necessary noise minimising landscaping measures and traffic calming measures.	This is addressed on a site specific basis and referred to in the Technical Guidance (Volume 1B) which accompanies the Plan.

All other sections in this chapter have taken into consideration Population, Human Health and Quality of Life.

5.8 Soil and Geology

5.8.1 Introduction

This section presents soils and geology which is defined as ‘all natural materials underlying a development, from the ground surface to an appropriate depth underground’. This includes bedrock, subsoils, topsoils and geological features such as karst, peat sequences and areas of geological interest.

A Thematic Strategy for Soil Protection has been produced by the EU, however the proposed Soil Framework Directive for Soils has not been established in law and therefore not yet 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 proposed Directive suggests that this may be achieved through rehabilitating brownfield sites, thus reducing the pressure on development of greenfield sites. It also states that soil should be used in a sustainable manner which preserves its capacity to deliver ecological, economic and social services, while maintaining its functions so that future generations can meet their needs.

5.8.2 Soils

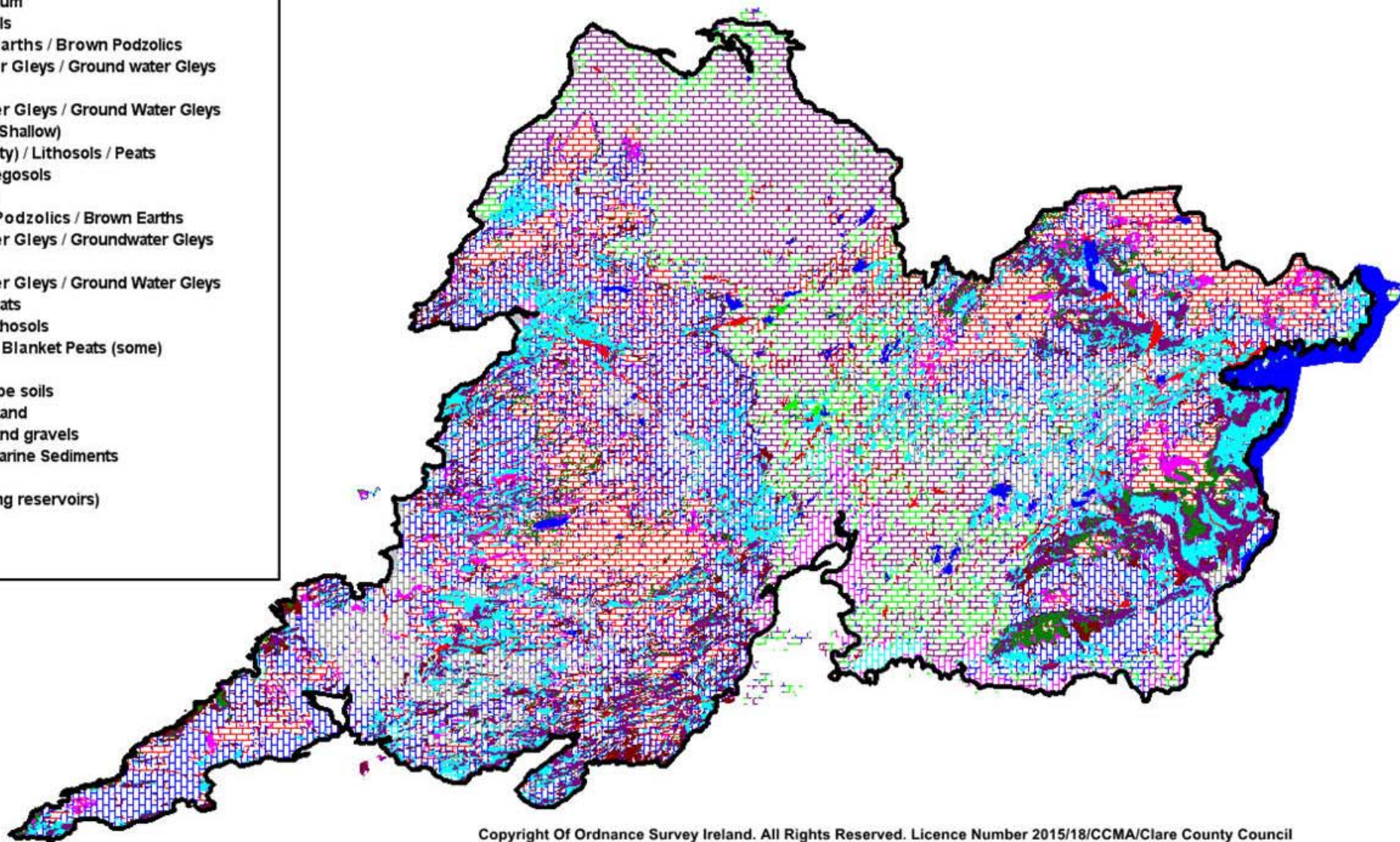
Soil comprises for the most part of organic matter, minerals and fine to coarse grained weathered rock. The variability of the constituent parts and the percentage content of each in the soil matrix results in differing characteristics. Soil is a complex mixture of weathered minerals, living organisms, organic matter in various stages of decomposition, gases and water. Numerous natural factors influence the composition of soils, notably bedrock, climate and topography.

Soils have a number of functions including supporting plant life and life within the soil, biogeochemical cycling of elements, energy cycles, water storage and exchange and ecosystem productivity. Soil formation occurs over very long timescales, and can be considered a non-renewable resource.

The main Great Soil Groups within the Clare County Development Plan 2017-2023 area are outlined in **Table 5.8.1** and illustrated in **Figure 5.8.1** “Soil Groups”.

Soils

- Aeolian undifferentiated
- Mineral Alluvium
- Marl Type Soils
- Acid Brown Earths / Brown Podzolics
- Surface water Gleys / Ground water Gleys
- Peaty Gleys
- Surface Water Gleys / Ground Water Gleys
- Peaty Gleys (Shallow)
- Podzols (Peaty) / Lithosols / Peats
- Lithosols / Regosols
- Blanket Peats
- Grey Brown Podzolics / Brown Earths
- Surface Water Gleys / Groundwater Gleys
- Peaty Gleys
- Surface Water Gleys / Ground Water Gleys
- Lithosols / Peats
- Renzinas / Lithosols
- Basin Peats / Blanket Peats (some)
- Basin Peats
- Lacustrine type soils
- Made / Built Land
- Beach sand and gravels
- Marine / Estuarine Sediments
- Scree
- Lake (including reservoirs)



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.8.1 Soils

SCALE: NOT TO SCALE

DATE:
January 2017

PROJECT NO.

DRAWN BY:
P. McMANUS

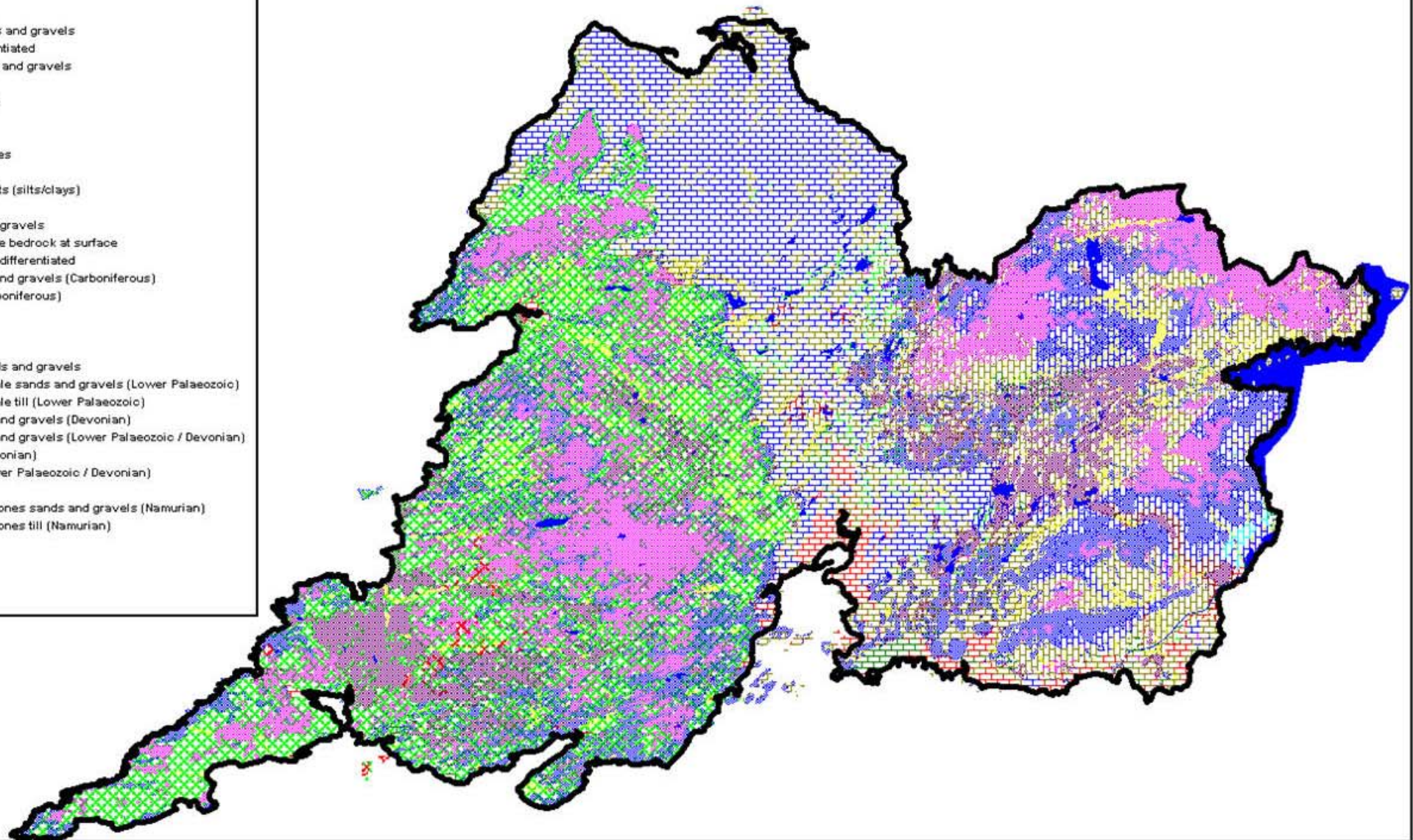
DRAWING NO.

CHECKED:
S. Downes

 County Outline

Subsoils

-  Acidic esker sands and gravels
-  Alluvium undifferentiated
-  Basic esker sands and gravels
-  Beach sand
-  Bedrock at surface
-  Blanket peat
-  Blown sand
-  Blown sand in dunes
-  Cutover peat
-  Estuarine sediments (silts/clays)
-  Fen peat
-  Granite sands and gravels
-  Karstified limestone bedrock at surface
-  Lake sediments undifferentiated
-  Limestone sands and gravels (Carboniferous)
-  Limestone till (Carboniferous)
-  Made ground
-  Marine clays
-  Marl (Shell)
-  Raised beach sands and gravels
-  Sandstone and shale sands and gravels (Lower Palaeozoic)
-  Sandstone and shale till (Lower Palaeozoic)
-  Sandstone sands and gravels (Devonian)
-  Sandstone sands and gravels (Lower Palaeozoic / Devonian)
-  Sandstone till (Devonian)
-  Sandstone till (Lower Palaeozoic / Devonian)
-  Scree
-  Shales and sandstones sands and gravels (Namurian)
-  Shales and sandstones till (Namurian)
-  Tidal Marsh
-  Water



Central to Clare
Clare County Council

**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.8.2 Subsoils

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

Table 5.8.1 Great Soil Groups for the Clare County Development Plan 2017-2023

Soil Group	Characteristics
Brown Earths	These are relatively mature well drained mineral soils processing a uniform soil horizon. Most Brown earths are found where there is lime deficient parent materials and are therefore acid in nature. Acid Brown Earths. Brown Earths can also be located on more lime-rich materials. Brown Earths have medium soil texture and have good structure and drainage characteristics and are extensively cultivated. They have relatively low nutrient status. Brown earth soils are found throughout County Clare
Brown Podzolics	This soil type has a good mix of mineral and organic matter in the surface layer and generally has a low nutrient status. They are usually devoted to cropping and pasture production and this soil type is found mainly throughout the midlands of Clare.
Grey Brown Podzolics	<p>Generally these soils have a proportion of limestone in their parent materials and have undergone a leaching process where there is a higher fraction of clay in the B Horizon. They can be moderate to well drained with a moderate to well developed soil structure and mostly neutral to slightly acid. The lighter textured Grey Brown Podzols are considered good all-purpose soils and very productive in most agricultural enterprises while the heavier textures soils are slightly more limited.</p> <p>There are two type of this series found in the study area namely the Elton Series and the Patrickswell Series.</p> <p><i>Elton Series</i> – surface structure is weak which can result in problems of poaching and soil compaction by stock. There is a lower clay fraction in the B Horizon and therefore this soil is considered as a minimal grey brown podzol.</p> <p><i>Patrickswell Series</i> – is typically a high ph soil with well to excessive drainage characteristics. There is a high clay content in the B Horizon.</p>
Brown Earths	Most brown earths are acid in nature and possess medium soil texture and have good structure and drainage characteristics and are extensively cultivated. They have relatively low nutrient status. The Kinvara Series of Brown Earths are found within the study area which are Limestone derived tills and are therefore more basic in nature. These soils are well to excessively drained with soil textures of gravelly clay loam to gravelly loam. The bouldary phase of this soil series indicates the presence of boulders which can limit the use of such lands to grazing. When managed well these soils typically can support a very high quality grassland.
Gleys	These soils have developed under conditions of permanent or intermittent waterlogging and have poor drainage capabilities generally. Gleys often can have a greyish appearance and exhibit mottling from the oxidising of iron in oxygen depleted conditions. Gley have a weak structure and are 'sticky' in nature when wet. Most gleys have poor drainage conditions which restricts growth in the Spring. Poaching by livestock is also a problem. There are two gley type soils found around Ennis, Drombanny and Shannon, formed by lake and estuarine alluvium. These soils are poorly drained and are mostly used for grass production and forestry.
Rendzinas	These are shallow soils not more than 50cm deep which limits its use. Drainage is always free to excessive in nature. In some parts where there is some depth of soil, uses such as tillage and pasture can be carried out but generally use is limited on account of the shallowness. The Kilcolgan – Bouldary Phase is the Series of Rendzinas found in the study area. This type is usually found over limestone glacial drift and again are shallow and well drained.
Complexes	Specifically the Burren-Ballincurra Series is found within the study area. This describes a landscape with a mixture of soils of brown earths, grey-brown podzols and rendzinas. Due to the pattern of occurrence of these soils on the landscape, they are too intricate to map individually and therefore are described collectively as a

	Complex soil type. Therefore, drainage and texture characteristically vary considerably even within short distances. Outcropping limestone bedrock is also a feature of this Series.
Peats	<p>Peat has a high organic matter content, usually >30%. There are two main types: Basin and Blanket Peat. These types differ in the way they were formed. Basin peat was formed in lake basins, hollows or river valleys or where the sub soil is impermeable enough to give an elevated water table. Basin Peat is further described as either Fen Peat or Raised Bog Peat. The Fen Peat is formed under the influence of base-rich ground-water and is composed mainly of the remains of reeds, sedges and other semi-aquatic or woody plants. Raised Bog can be formed on top of Fen Peat where it is influenced by precipitation more so farther than groundwater. A lot of raised bog in County Clare has been cut-over.</p> <p>Banagher Peat, Aughty and Allen cut-over peat are the types found in the study area and occur in river valleys and interdrumlin hollows. The Banagher peat is associated with soils derived from limestone and carboniferous shales. This peat has also been influenced by base-rich groundwater which the cut-over peats, podzols and gley soils are strongly associated.</p>

Source: 'Soils of County Clare' by T.F. Finch – National Soil Survey of Ireland, An Foras Taluntais, 1971.

The subsoil parent material is that from which the subsoil is ultimately derived; the character of the underlying bedrock and also the influence of the development of subsoil. Subsoils for the majority of the Plan area are outlined in **Table 5.8.2**. The distribution of subsoil in the Plan area is shown in **Figure 5.8.2 "Main Sub Soils"** and summarised in **Table 5.8.2**.

Table 5.8.2 Parent material Characteristics of the Main Subsoils in the Plan Area

Subsoil Parent Material	Description
Alluvium	Undifferentiated sediments – usually by watercourses. Marl sediments also present in the north of the plan area.
Peat	Fen peats mainly in the east of the plan area.
Sands and Gravels	Subsoils derived variously from Lower-Palaeozoic to Carboniferous shales, sandstones, limestones and granites
Scree	Collections of broken rock fragments usually found at the bases of hills and mountains
Tills	Limestone tills throughout and also some sandstone derived tills in the north of the plan area.
Karst Rock – in some cases the rock can be at or near the surface	Limestone bedrock is throughout the plan area with several limestone bedrock formations present with varying degrees of karstification. In many areas there are shallow soils with bedrock at or near the surface.
Aeolian Sediments	Wind-blown sediments including sand and dunes
Lacustrine Sediments	Comprised of undifferentiated lake sediments
Marine Deposits	Material derived from marine and estuary clays, silts, sands, gravels and marls.
Made Ground	Made-up ground of an artificial nature. Centre of the plan area and denotes development areas.

Source: EPA Soils Parent Material classification (2001)

5.8.3 Soil and Climate Change

Significant changes to soil condition can be brought about by the impacts of climate change including changes in air temperature, precipitation and extreme weather events - increased occurrence of summer droughts and increased winter rainfall. The potential impacts of these weather changes are likely to be experienced most significantly in relation to agriculture, peatland areas and forestry areas as well as increasing the potential for flood risk. In addition to potential effects on soil condition, dryer summers (likely to be experienced more in the east of the country) would require irrigation of crops during summer months thus requiring necessary infrastructural investment to store winter rain. The drying out of soils in response to climate change could result in deterioration of soil quality. In wetter western areas, within which the Plan area lies, increased rainfall could cause increased soil erosion. Generally, a combination of dry summers and wet winters could also result in subsidence and soil heave.

5.8.4 Geology

The geology of County Clare is shown in **Figure 5.8.3**. The western area of County Clare consists of Namurian sandstone and shale which are sedimentary rocks. Marine shelf facies stretches from the north of Clare, through the centre of the county, down to the southern centre of the county and also into the east – the last glaciation event carved into these deposits which now form the limestone pavements making up the Burren landscape. The south of Clare also contains three small areas of Waulsortian mudbank deposits. The east of the county consists of three corridors and four small areas of Waulsortian mudbank. In addition, there are two patches of marine shelf facies, two corridors and six patches of Courcayan limestone, two large and two small areas of Upper Devonian to Lower Carboniferous Old Red Sandstone, five areas of Silurian sandstone/greywacke/ shale, two small areas of Mid to Upper Ordovician acid volcanics, two small areas of marine shelf facies, two small areas of Mid to Upper Ordovician slate, one small area of Carboniferous volcanics and minor intrusions and three corridors and three small areas of lower limestone shale.

The rocks in general decrease in age from west to east – early Ordovician volcanic activity was followed by Silurian marine sediment deposition in the west, followed by deposition of sandstones during the Devonian when sea levels dropped. Extensive deepwater limestones were deposited during the Carboniferous mostly to the north and centre of County Clare, which today forms the limestone pavements and karstic features of the Burren landscape. This limestone deposition was followed by gradation to shallower seas with the west of Clare characterised by river and delta deposits during the latter part of the Carboniferous.

There are 45 sites of geological importance within County Clare, which include cave systems, limestone pavements and mushroom stones. The Geological Survey of Ireland (GSI) has identified some of these areas as County Geological Sites as part of their Irish Geological Heritage Programme. The Geological Sites which have been identified in county Clare are illustrated in **Figure 5.8.4** and listed in **Table 5.8.3**. The Irish Geological Heritage Programme identifies and selects the most significant County Geological Sites which will be recommended for designation as NHAs in the future.

Heritage Map site ID	Heritage Site Name
CE001	Aillwee Hill
CE002	Ballycar South
CE003	Ballycroum Hill
CE004	Ballykinnacorra North
CE005	Ballymalone
CE006	Ballyvorgal South
CE007	Black Head
CE008	Bridges of Ross
CE009	Caher Hill
CE010	Carran enclosed depression
CE011	Coad
CE012	Coolagh River Cave
CE013	County Council Quarry
CE014	Crossard
CE015	Doolin Cave
CE016	Doolin Green Holes
CE017	Doolin to Hags Head (Cliffs of Moher)
CE018	Doonaha
CE019	Elmvale
CE020	Fergus River Cave
CE021	Foohagh Point
CE022	Glencurran Cave
CE023	Gortlecka








Source: GSI, 2013

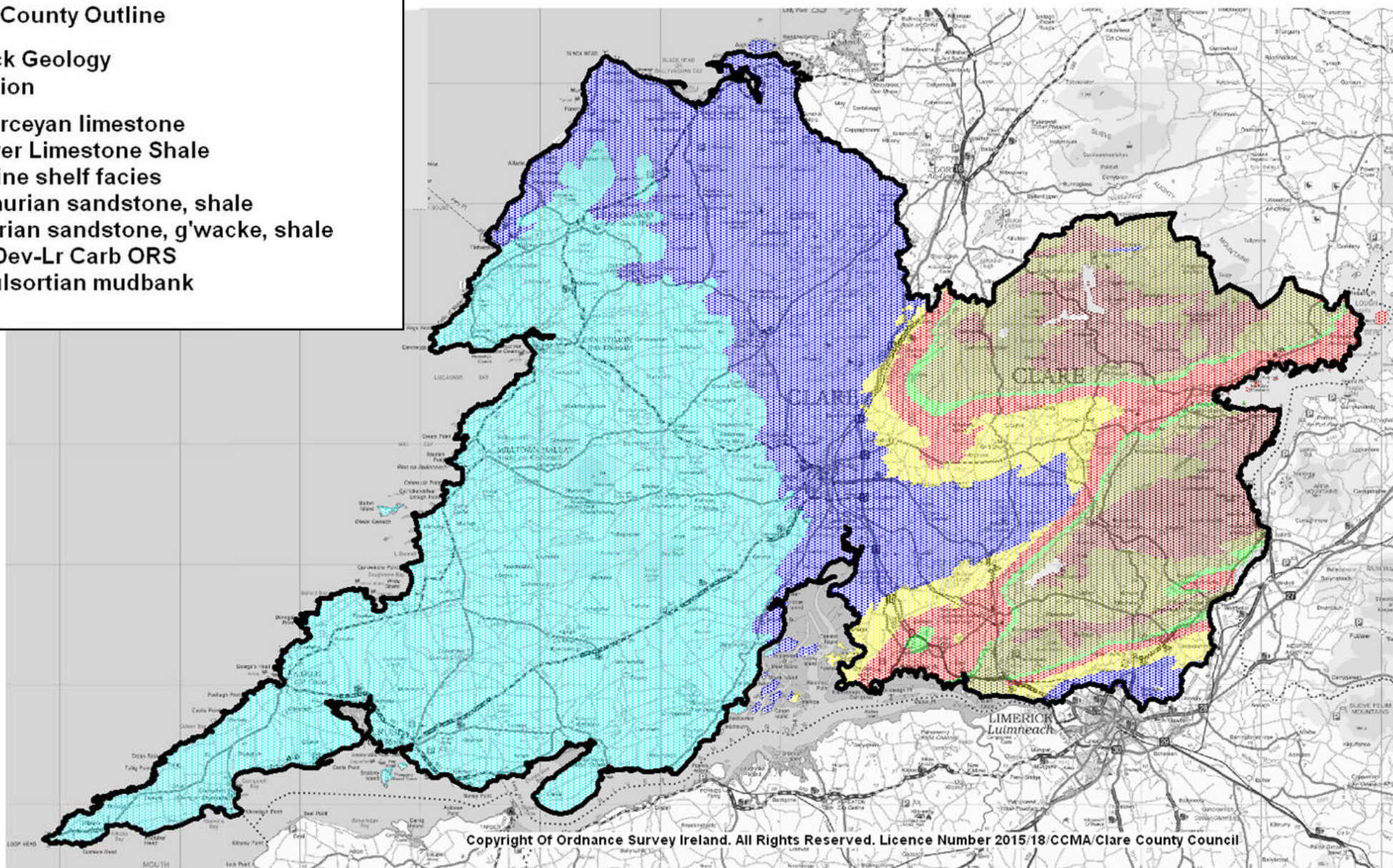
Heritage Map site ID	Heritage Site Name
CE024	Gull Island, Tullig Point and Truskieve section
CE025	Kilbreckan
CE026	Killinaboy
CE027	Loop Head
CE028	Maghera quarry
CE029	Magowna
CE030	Mullaghmore / Slieveoe / Knockanes
CE031	Pol an Ionain
CE032	Poulsallagh
CE033	Rineanna Point, Shannon Estuary
CE034	Rinnamona
CE035	Roadford
CE036	Sheshymore
CE037	Spanish Point
CE038	Sraheen
CE039	St. BrendanÆs / Poulmagollum
CE040	St. BrendanÆs Well
CE041	The Tomeens
CE042	Toonagh Quarry
CE043	Tuamgraney
CE044	Turkenagh
CE045	Vigo Cave

Table 5.8.3 Heritage Sites

 County Outline

Bedrock Geology Formation

-  Courceyan limestone
-  Lower Limestone Shale
-  Marine shelf facies
-  Namurian sandstone, shale
-  Silurian sandstone, g'wacke, shale
-  Up Dev-Lr Carb ORS
-  Waulsortian mudbank



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.8.3 Geology

SCALE: NOT TO SCALE

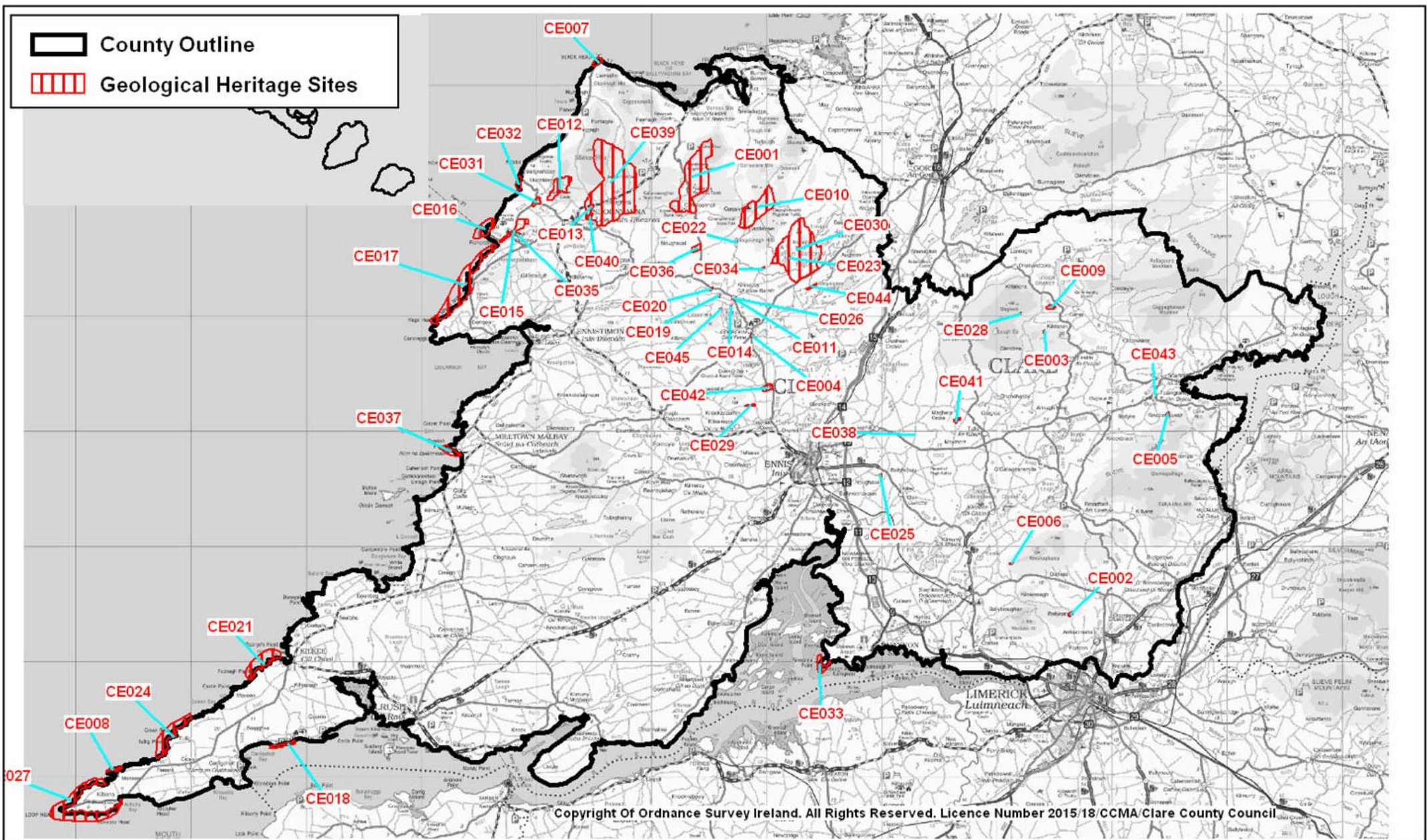
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.8.4 Geological Heritage Sites

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.8.5 Quarrying

There are reasonable reserves of extractable natural resources, particularly limestone within the area. Extraction ultimately leads to the total removal of a resource within a given area and can lead to localised environmental issues. Section 261 of the Planning and Development Act 2000 (as amended) provides for the registration and control of quarries and Quarry and Ancillary Activity Guidelines for Planning Authorities 2004 (Department of the Environment, Heritage and Local Government) is a useful guide when assessing applications for quarry developments. **Figure 5.8.5** indicates the distribution of known quarrying activities in the County.

5.8.6 Landfill

The landfill site at Doora is closed and no further waste activity is permitted on the site. It has been decommissioned and rehabilitated and is currently in recreational use. There is ongoing environmental monitoring at various locations throughout the site, a leachate tank for the collection of leachate runoff and a Flare for the burning off of gases that accumulate on site. There are no active landfill sites within the Plan area.

5.8.7 Contaminated Sites

Currently there is no specific legislation addressing contaminated land in Ireland and to date numerous approaches to the problem, including the ad hoc application of standards and methodologies from other countries, have been applied. In contrast to the UK, historical industrial development within the Republic of Ireland has been restricted primarily to the main port cities. Therefore, land affected by contamination is less widespread and is related primarily to unregulated disposal of waste, agricultural practices and point source releases to ground from discrete sites.

There is no statutory definition of “Contaminated Land” within Ireland, and the term is generally used to refer to all land affected by land contamination. The issue of contamination is covered in a number of existing legislative acts; which are focused primarily on ensuring prevention of pollution from ongoing activities rather than driving clean up from historical use. To date, remedial action with respect to contaminated soils has been driven by the planning and development process and more recently by the requirement for local authorities to identify and assess unregulated waste disposal sites.

The principles of risk assessment, including the concept of the source-pathway-receptor linkage, have been adopted by the Environmental Protection Agency (EPA) for the assessment of Environmental Liabilities and Unregulated Waste Disposal Sites. However, there remains no formalised approach to the assessment of risks to human health from contaminated soils or groundwater.

There are 6 contaminated sites in the Shannon Estuary region which were compiled as part of the Shannon International River Basin Management Plan. In relation to these sites, action has progressed through the IPPC and Codes of Practice licensing systems (for contaminated lands and landfills respectively). These sites are owned by Atlas Aluminium Ltd., Heraeus Metal Processing Ltd., Schwarz Pharma Ltd., Shannonside Building Supplies Ltd. and two sites owned by the Electricity Supply Board (at Tarbert and Moneypoint).

5.8.8 Issues and Threats in the Plan Area

Threats to soil and geology can materialise in the form of the actual loss or damage/disturbance of soil and bedrock. Soil loss occurs through the removal of soil during construction of developments, particularly on Greenfield sites. Soil disturbance through activities and practices associated with agriculture, forestry – planting and felling, road construction, quarrying, drainage works/dredging etc, can result in a loss of vegetative cover thereby reducing soil stability that can lead to sediment run-off often into the aquatic environment. Factors such as soil type, land slope and the degree of disturbance and indeed the quality and proper maintenance of effective measures used for the prevention of sediment run-off, can also produce an increased risk of nutrient run-off within the sediment itself. The physical presence of sediment in an aquatic ecosystem can have damaging and even catastrophic effects to spawning beds and oxygen balancing regimes which are imperative for healthy fish populations, and other aquatic flora and fauna. But also nutrients such as a Phosphorus that is bound to soil, albeit sometimes poorly e.g. peat soils, becomes mobile through sedimentation which impacts the aquatic environment and causes further deterioration to water quality and aquatic habitats. Bedrock geology is threatened through practices such as unlicensed quarrying activities, restructuring of land without permission, etc. which can result in a loss of our geological heritage.

Degradation of soils can cause loss of soil as well as ecological soil processes which would lead to a reduction in its production capacity as well as deplete soil quality and biodiversity.

Soil is lost through construction on greenfield sites for development. Soil erosion can also occur from agricultural and forestry practices, quarrying activities and road and major infrastructural projects. Developments can impact on natural drainage and poor wastewater treatment facilities and leaking oil tanks serving development can cause contamination of soil which can then make its way into the public water supply and private abstractions.

Also problem of transferring of soil can facilitate the spread of invasive species whereby roots can be transferred from one location to another.

Adverse environmental impacts can occur from extractive industries, from both existing quarries and new quarry extensions if not managed appropriately. Extraction ultimately leads to the total removal of a resource within a given area and can lead to localised environmental issues. The implications of this for the natural and cultural environment can result in the landscape being eroded, archaeological heritage being lost, and pollution occurring. Due to the nature of quarrying it can result in re-profiling of the landform which can have adverse visual impacts on the landscape and on scenic routes. Biodiversity, groundwater and aquifer resources are also vulnerable, foreshore, beaches, sand dunes and water courses can have adverse impacts on ecosystems in an area and coastal erosion.

5.8.9 What would happen to Soil and Geology without the implementation of the Plan?

In the absence of the Development Plan there would be no framework for future development and therefore protection of the soil environment. A key objective to rehabilitate brownfield and derelict sites 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 impact on public health.

5.8.10 Data Gaps/difficulties

Register of contaminated sites and associated mapping. Associated risk of inadequate disposal measures of contaminated soils due to lack of information of contaminated sites.

Unregulated quarrying extraction within the plan area.

Comprehensive record and mapping of invasive species within the plan area.

5.8.11 Inter-relationships

There is a particularly strong inter-relationship between soil/geology and water, biodiversity and human health. A declining soil quality can lead to a decline in water and/or air quality.

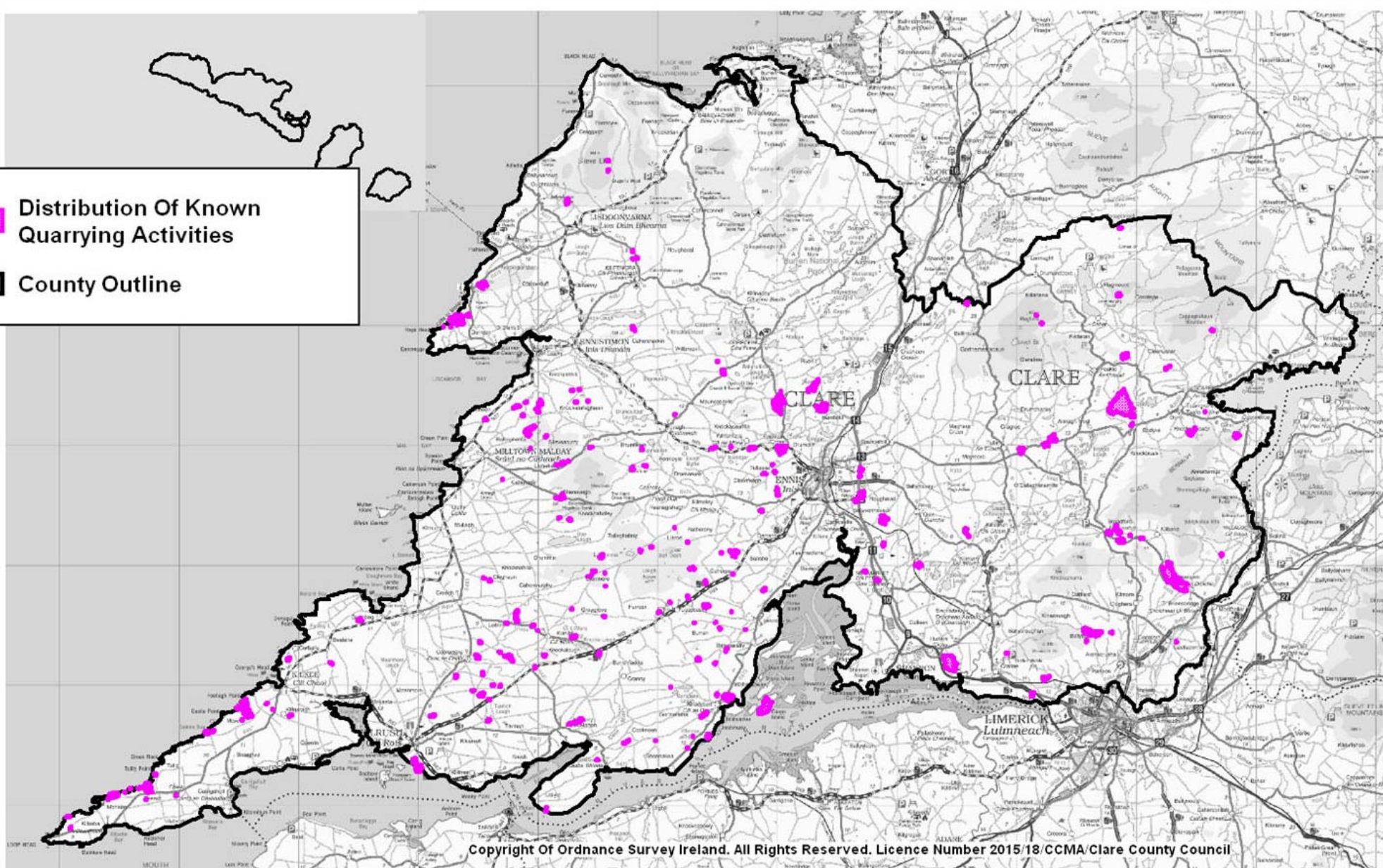
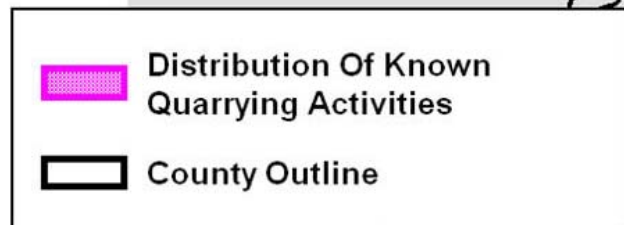
	PHH	BFF	W	ACF	L	CH	MAT	MAW	MAWS	MAWW	MARE
SG	√	√	√	√	√	√	√	√	√	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;

5.8.12 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Soil and Geology	Inclusion in the Plan
Register and mapping of contaminated sites, including old petrol station sites to co-incide with the Plan objective for development of brown field sites to ensure due diligence, particularly in relation to soil and groundwater, on sites prior to development.	A specific objectives has been included as objective 14.10



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.8.5 Distribution Of Known Quarrying Activities

SCALE: NOT TO SCALE

DATE:
January 2017

PROJECT NO.

DRAWN BY:
P. McMANUS

DRAWING NO.

CHECKED:
S. Downes

5.9 Air and Climate

5.9.1 Introduction

The quality of the air that we breathe is dependent upon the climate that we live in and the changes that are occurring, and will continue to do so in the future. The pace at which this change occurs will be influenced by the management of our air quality, by means of compliance with regulations (statutory instruments) regarding the release of emissions into the atmosphere from such sources as vehicle emissions, fuel combustion and domestic solvent usage.

5.9.2 Air Quality

Air quality is dependent on a number of factors including the source of potential pollutants and weather conditions. The Air Framework Directive (96/62/EC) requires member states to divide countries into zones for the assessment and management of air quality. Ireland is divided into four zones which include:

- Zone A – Dublin Corporation
- Zone B – Cork Conurbation
- Zone C – Other Cities and large towns; and
- Zone D – Rural Ireland.

The majority of County Clare falls within Zone D with the exception of Ennis Town and surrounding urban area which falls under Zone C. Transport and industries are the main influences on air quality in County Clare. Ennis and Environs falls within Zone C and the main influences on air quality here are from transport and industrial activity. The Environmental Protection Agency (EPA) manages the ambient Air Quality Network and there is a monitoring station located in Ennis at the Local Authority building at Waterpark House. The air quality index is calculated based on the information gathered from the monitoring stations using a Quality Index for Health, which is calculated every hour and indicates if air quality is good, fair, poor or very poor. The air quality in the Rural West Region and County Clare is “good” with daily up to date information available for download from <http://www.epa.ie/air/quality/#.VgAeTlc4ygl>

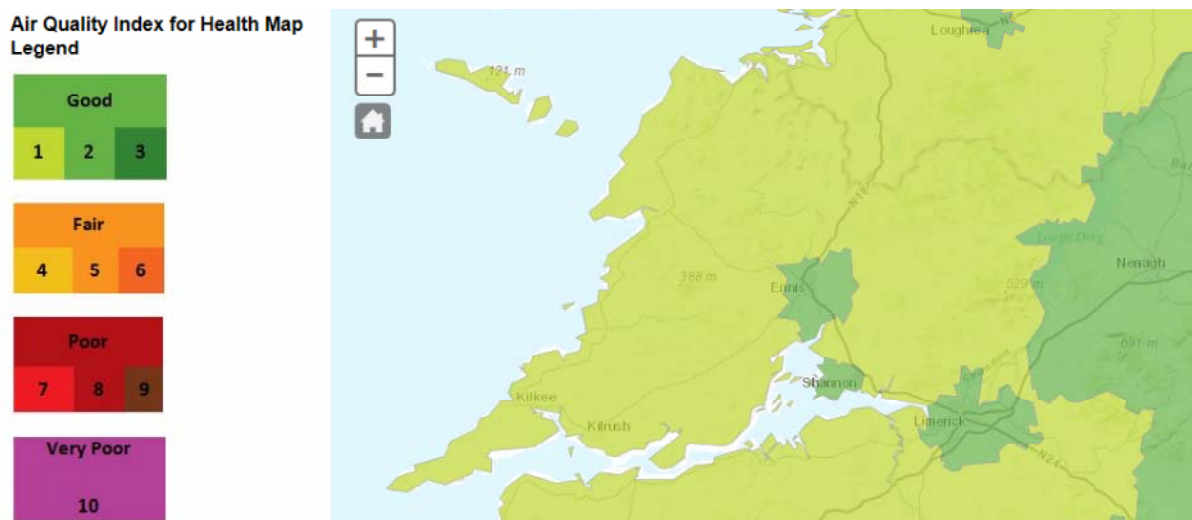


Figure 5.9.1 Air quality Index for County Clare

Domestic Solid Fuel Burning

The control of domestic burning of bituminous fuel (smoky coal) is administered through the Air Pollution Act (Marketing, Sale, Distribution and Burning of Specified Fuels) Regulations 2012 (S.I. No. 326 of 2012). This is in response to evidence arising from the ban introduced in Dublin 1990 and that banning the use of smoky coal is effective in reducing smoke and sulphur dioxide levels. Limiting harmful emissions of air pollutants arising from the use of residential fuels will contribute to safeguarding air quality. Consequently the Smoky Coal Ban Regulations have been extended to other cities and large towns. Ennis and its environs are covered by the smoky coal ban.

Decorative Paints and Solvents

Decorative paints and solvents are composed of volatile organic compounds (VOC) which pose a risk to health and the environment. In still, sunny conditions and in the presence of nitrogen oxides (contained in vehicle exhaust gases), VOCs react to form ground level ozone. Ozone is one of the components of summer smog and harms human health through respiratory illness, crops and the general ecosystem. Ozone can be transported over long distances, possibly hundreds of kilometres, from where it is formed.

Regulations governing solvent emissions are now in force which oversee the emission of solvent vapours from specified activities and bring the activities of much smaller businesses under the control of the local authorities. Businesses now affected include vehicle refinishing companies which carry out original coating of road vehicles or trailers and dry cleaners.

The current register of compliant facilities under European Union (Installations and Activities Using Organic Solvents) Regulations (S.I. No 565 of 2012) for the County includes three facilities located in Ennis. The register of compliant facilities under European Union (Paints, Varnishes, Vehicle Refinishing Products and Activities) Regulations 2012 (S.I. 564 of 2012) includes three facilities within

Ennis town. The EPA has produced best practice guidelines for dry cleaners and separate guidelines for vehicles refinishing

5.9.3 Climate Change and Greenhouse Gas Emissions

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as ‘... any change in climate over time, whether due to natural variability or as a result of human activity’. Climate change and the effects associated with it present a significant challenge. It is acknowledged that global warming is contributing to climate change and that global warming is associated with human activity.

In 2007, the European Union agreed new climate and energy targets, that by 2020 there would be a 20% reduction in greenhouse gas emissions; 20% energy efficiency and 20% of the EU’s energy consumption to be from renewable sources all by 2020. Following on from this Ireland has given an undertaking to reduce net emissions by at least 80% by 2050 (on 1990 levels) and an emissions reduction trajectory of an average of 3% per year until 2020 as set out in the Climate Change Bill, 2010.

On 24 October 2014 the European Council approved the 2030 Framework for Climate and Energy, proposed by the European Commission with objectives to be met by 2030:

- a binding EU target of at least 40% reduction of greenhouse gas emissions by 2030, compared to 1990;
- a binding target of at least 27% of renewable energy used at EU level;
- an energy efficiency increase of at least 27%, to be reviewed by 2020 having in mind an EU level of 30% for 2030;
- the completion of the internal energy market by reaching an electricity interconnection target of 15% between Members States and pushing forward important infrastructure projects.

The burden sharing for Ireland will be decided at the United Nations Climate Change Convention in Paris during December 2015.

Climate change is difficult to predict but the general trend is towards milder wetter winters and warmer, drier summers and an increase in extreme weather events (implications for flood/drought – effects on water supply/human health/water quality/biodiversity/infrastructure/etc).

Resilience to climate change needs to be integrated into the County Development Plan through the appropriate use of mitigation and adaptation measures, and the location, nature and extent of zonings.

Mitigation measures are actions that reduce the impact humans have on the climate system by reducing/managing our emissions of greenhouse gases⁶, or providing/enhancing carbon sinks⁷. Examples include moving to more sustainable forms of transport, increasing energy efficiency by

⁶ The most abundant greenhouse gases in Earth’s atmosphere are water vapour (H₂O), carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃) and CFCs. They are called green house gases because they absorb infrared radiation produced by the sun warming the earth’s surface, trapping the heat in the atmosphere.

⁷ A carbon sink accumulates carbon-containing compounds. Carbon sinks include soils, trees and oceans.

improving building insulation, using energy generated from renewable sources, and increasing forest cover.

Adaptation measures are actions taken to diminish the vulnerability and increase the resilience of a given system or group of systems to existing or anticipated climate change impacts. Adaptation responses can take the form of:

- **Grey** engineered measures to reduce climate hazards, such as the construction of flood defences;
- **Green** ecosystem-based adaptation measures, such as the restoration of dune systems and wetlands to buffer against sea level rise; and
- **Soft** adaptations which aim to alter the behaviour of the public through policy or economic instruments, such as offering discounted insurance on homes which retrofit flood defences.

Adaptation measures are essential in order to address the impacts of climate change through the County Development Plan, given that many of the impacts of climate change are unavoidable in the short to medium term, regardless of how successful climate mitigation measures are in reducing future emissions.

5.9.4 Climate Change and Flooding

The principal sources of flooding are rainfall or higher than normal sea levels. The indications are that the western part of the country will become wetter during winter periods and experience more extreme weather events. Within the Plan area the interaction between flood water originating in the River Fergus catchment for example and tidal waters indicates the potential for flooding events to be exacerbated by climate change within the Ennis Area. In addition much of County Clare has been and continues to be affected by coastal flood events during periods of combined high rainfall and high tides together with an increased number of severe storm events. A Flood Risk Assessment has been undertaken for the Plan area which will assist in identifying appropriate areas for development. Flood alleviation works that have been undertaken and are in the pipeline will aid in the management of flood waters in protecting the main settlement areas within the county. However mitigation and adaptation measures need to be integrated into the Plan by allocating development to areas which will not impact on natural flooding regimes, avoiding exacerbating and/or displacing flooding, and ensuring that development in flood risk areas is adapted to cope with flooding either by type use (i.e. less vulnerable), design, finished floor levels etc.

5.9.5 Issues and Threats in the Plan Area

Most greenhouse emissions are related to energy generation, transport, agriculture, and industry sectors. Focus is being put on predicting how a changing climate will impact on some of our most threatened species, for example, species at the range limits. Sea level rise is another issue of concern. Alternative energy options are being explored in the County. A common concern in relation to wind energy developments relates to impacts on peat soils and hydrogeology, impacts on bird species, and habitat disturbance. These are discussed in more detail in the Clare Wind Energy Strategy – Vol. 5 of Clare County Development Plan 2017 - 2023. Alternative modes of transport for all ages will be encouraged within built up settlements which will seek to address urban traffic generated air pollution by reducing car dependency. Rural areas in the plan area due to their size and low density are unlikely to give rise to urban generated air pollution.

5.9.6 What would happen to air and climate without the implementation of the Plan?

Climate change is predicted to increase problems of flooding and potential increase in periodic droughts due to changes in rainfall patterns. Provision needs to be incorporated into the Plan for mitigation and adaptation measures to provide for the Plan area to become resilient to meeting the challenges of climate change. If the Plan were not to be implemented flooding would become an unmanaged phenomenon with significant environmental effects across all the environmental parameters set out in this report.

5.9.7 Data gaps/difficulties

There is a general absence of detailed information specific to Ireland in relation to Climate Change and what is available can be difficult to identify and source. The Climate Ireland resource currently being developed and undergoing testing will be a significant advancement once it has reached completion and becomes available as a generally accessible resource, anticipated for 2015.

5.9.8 Inter-relationships

Air quality and climate change has a strong inter-relationship with all environmental parameters.

	PHH	SG	W	BFF	L	CH	MAT	MAW	MAWS	MAWW	MARE
AC	√	√	√	√	√	√	√	√	√	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;

5.9.9 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Air and Climate	Inclusion in the Plan
<u>Climate</u> Climate change must be defined within the County Development Plan and embraced as a central component to the Plan reflecting its importance and need for integration into the various components of the Plan to ensure resilience to future climate change. Mitigation and Adaptation measures should be clearly defined.	Yes. This is achieved through the inclusion of a specific chapter on climate change (Chapter 18) together with linkages and integration across all other chapters including Section 6.3.14 in relation to Green Technology and Climate Change Adaptation, Section 8.2.6 SmarterTravel in terms of Energy Efficiency and Section 18.6 in relation to flood risk management and climate chnge.
Include an objective within the Plan to prepare a Climate Change Adaptation Plan.	This is a specific objective in the CDP Objective 18.2 (a).
The Flood Risk Assessment is undertaken taking account of the existing use of benefitting lands. Proposed land-use zonings should take this into account, by providing for future development which would be similar or less vulnerable in nature to that of the existing use. The justification test should be undertaken when considering future land-use zonings for designated Flood Zone areas in the Plan area.	Yes.

Continue to support the progression of the development of the Climate Ireland website as a major information resource on climate change in Ireland.	This is not a specific objective of the Plan.
The Plan should include an objective to promote and encourage combined heat and power and district heating.	This is a specific objective in the plan as Objective 18.5.
The Plan should include an objective which seeks to encourage and facilitate the development of low carbon/passive housing by requiring development proposals to demonstrate to detail how it adopts energy efficiency and environmental sustainability.	Yes. This is achieved through the inclusion of objectives 17.3 & 17.4.
The Plan should incorporate and promote sustainable transport including supporting and promoting increased provision of public transport, particularly in relation to a local bus service, to serve the Plan area.	Yes.
The Plan should acknowledge the close inter-relationship between a low-carbon community with green infrastructure by incorporating cross-referencing between and appropriate objectives in this regard e.g promoting the implementation of a green infrastructure strategy will encourage a shift away from the use of private transport to more sustainable modes of walking, cycling etc.	Yes.
<p><u>Air</u></p> <p>Uses within neighbourhood centres should be considered in relation to the odours and noise generated by certain commercial activities. Some uses cause localised problems in this regard, for example significant problems occur in relation to dry cleaners (air pollution) and late night takeaways (air pollution and noise from late night customers) and general servicing with late night deliveries causing local disturbance. Mitigation measures – physical buffer between neighbourhood centre and residential areas (e.g. through provision of open space/playing fields etc). Dry cleaners that are to be located in a neighbourhood centre should consist of a collection point with the cleaning process being undertaken off-site in a location suitable to such uses, for example an industrial estate.</p> <p>Facilities where the cleaning process is undertaken must be registered, assessed and have a certificate of compliance with a solvent management plan in place for dry cleaners. Measures should be put in place in accordance with the EPA “Best Practice</p>	This is not explicitly stated in the Plan.

Guidelines for Dry Cleaners” and “Best Practice Guidelines for Vehicle Refurbishment” to minimise the risk of air contamination from these sources.	
The protection of trees within the Plan area, as well as the requirement for additional planting to accompany proposals for development in recognition of their multi-functional role they play within the environment i.e. carbon sink, noise buffer, biodiversity and amenity value.	The importance of trees within the county is highlighted throughout the Plan and through the inclusion of objectives 14.15
Prepare an integrated sustainable transport plan, including mobility and permeability within the town centre, neighbourhoods and the linkages between them, including green infrastructure.	This is incorporated throughout the Plan as reference is made to sustainable mobility, including walking, cycling and green infrastructure strategies and through the inclusion of objective 8.10.

5.10 Water

5.10.1 Introduction

A desk-based assessment of water quality in the study area was conducted. The sources of the water quality information include:

- Water Framework Directive water body status information arising from the Water Framework Directive monitoring programme (EPA, 2011);
- Bathing water quality information outlined in the EPA's most recent bathing water quality report,
- The Quality of Bathing Water in Ireland, An Overview for the Year 2012 (EPA, 2013);
- Nutrient sensitive areas under the Urban Waste Water Treatment Regulations, 2001 (SI No. 254 of 2001); and
- GSI aquifer vulnerability information.

The 'environmental status' of marine waters will be established under the Marine Strategy Framework Directive (MSFD). However, the process of implementation of the directive is ongoing and environmental status has not been established to date. According to Ireland's Marine Strategy Framework Directive Article 19 Report, in most cases, the targets and indicators to measure progress towards GES for each pressure element remain to be fully defined, validated or implemented, so the determination of current status relative to GES is not complete.

5.10.2 Water Framework Directive

Since 2000, water management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). It requires that all member states implement the necessary measures to prevent a deterioration of the status of all waters, these being surface, ground, estuarine and coastal, and to protect, enhance and restore all waters with the aim of achieving 'good status' by 2015. Member states, under this Directive, must keep a register of all the water bodies that require more stringent measures in terms of protection by virtue of how the water is used by people and by wildlife. The new European Union (Water Policy) Regulations 2014 give effect to a new three tier governance structure and administrative arrangements to bring "clarity and certainty to the implementation of the Water Framework Directive", whereby local authorities (Tier 3) will lead on implementation, enforcement and public engagement at local river level.

5.10.3 Shannon River Basin Management Plan

For the purpose of implementing the WFD, and developing the first cycle River Basin Management Plans (2009 to 2015), Ireland was divided into eight River Basin Districts. The majority of County Clare is situated within the Shannon International River Basin District (ShIRBD) with a small area in the Western River Basin District (WRBD). It should be noted that for the second and future cycles of river basin management planning, the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District. In relation to the North Western and Neagh Bann International River Basin Districts, a single administrative area will be established in the Republic of Ireland portion of these two International River Basin Districts for the purpose of coordinating their management with authorities in Northern Ireland.

RBDs were further divided into Water Management Units (WMUs) for the purposes of WFD implementation. The WMUs within County Clare include Lough Derg, Fergus, Kinvara, West Coast Clare and South Clare/ Shannon WMUs.

WMUs are further divided into water bodies which were originally delineated by the EPA in 2002 and were the reporting unit of the first cycle River Basin Management Plans. Subsequently, during 2013/14, the EPA updated water body boundaries to ensure that all water bodies incorporate a monitoring point at their downstream end. It should be noted that future iterations of WFD water body status will be based on these new water bodies.

As part of the 2nd WFD Cycle 2015 -2021 Water Management Units have been replaced with a shift to the catchment based approach. The Catchment as the basis of water management is not a new concept however; Integrated Catchment Management is new to Ireland. The Catchment dataset forms part of a three tier hierarchy. The base unit, and tier 1, are the WFD River waterbodies (RWB). The middle tier will consist of the WFD Subcatchments and the final tier, tier 3 will be the WFD Catchments (See **Figure 5.10.1**). The Catchments dataset is built using clusters of these RWB basins.

5.10.4 WFD Waterbody Status

Environmental Quality Standards (EQSs) for classifying surface water status are established in the European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (SI 272 of 2009). These regulations set standards for biological quality elements, physico-chemical conditions supporting biological elements (including general conditions and specific pollutants), priority substances and priority hazardous substances.

The 'ecological status' of a water body is established according to compliance with the EQSs for biological quality elements, physico-chemical conditions supporting biological elements and relevant pollutants (**Figure 5.10.2**). The 'chemical status' of a water body is established according to compliance with the EQSs for priority substances and priority hazardous substances (SI 272 of 2009).

In order to establish the WFD status of water bodies, the EPA developed a new, WFD-compliant monitoring programme which began in 2006. Interim status classifications were published in 2009 based on monitoring information collected between 2006 and 2008. Final status classifications, based on the results of a complete monitoring cycle, i.e. 2007 to 2009, were reported in 2011 (EPA, 2011).

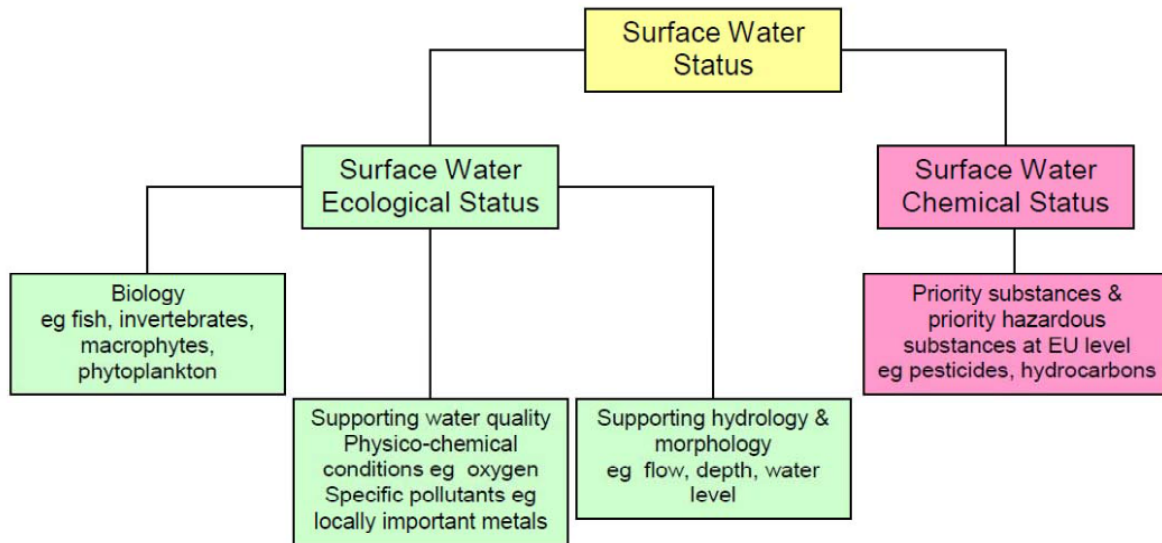


Figure 5.10.2 Elements of WFD surface water status

The WFD water body status of the surface and groundwater bodies within County Clare and published by the EPA in 2015 is summarised in **Table 5.10.1** and illustrated in **Figure 5.6.5** (River & TraC Status), **Figure 5.10.3** (Lake waterbody status) and **Figure 5.10.4** (groundwaters).

In summary, the assessment of Ireland's water resources shows that for those water bodies where status has been assigned:

- 71 % of river channel is at high or good status;
- 44.6 % of lake area monitored is at high or good status;
- 64 % of the area of transitional and coastal waters are at high or good status;
- 85.6 % of the area of groundwater aquifers is at good status.

Water Body Type	No. Water Bodies	% Water Bodies	% Water Bodies
River Water Bodies			
High Status	16	11.4%	50%
Good Status	54	38.6%	
Moderate Status	21	15%	30%
Poor Status	21	15%	
Bad Status	0	0%	
Unassigned	28	20%	20%
Lake Water Bodies			
High Status	3	8.6%	25.7%
Good Status	6	17.1%	
Moderate Status	8	22.6%	30.9%
Poor Status	1	2.6%	
Bad Status	2	5.7%	
Unassigned	15	42.8%	42.8%
Transitional and Coastal Water Bodies			

High Status	8	47%	70.5%
Good Status	4	23.5%	
Moderate Status	5	29.4%	29.4%
Poor Status	0	0%	
Bad Status	0	0%	
Unassigned	0	0%	
Groundwater Bodies			
High Status		0%	3.4%
Good Status	1	3.4%	
Moderate Status		0%	96.5%
Poor Status	28	96.5%	
Bad Status		0%	
Unassigned		0%	0%

Table 5.10.1 Water Framework Directive Status

The reason for the classification of river water waters as ‘less than good status’ is mainly due to the results of macroinvertebrate sampling. In some cases, physico-chemical, diatom or fish sampling results are the cause for a less than good classification. Approximately one third of the river water bodies in County Clare have extended deadlines, i.e. beyond the first river basin management cycle (2015), for the achievement of the WFD core objectives. The core objectives are the prevention of deterioration, restoration good status, reduction in chemical pollution and achievement of water related protected areas objectives. These alternative objectives are due to a range of pressures and conditions including waste water treatment plants, agriculture, morphological pressures, the presence of gley soils, the conservation status of protected species, e.g. freshwater pearl mussels, and the current level of impact at the water body. Two water bodies have extended deadlines to 2027 due to the presence of forestry and acidification risks.

The reason for the classification of lake water bodies as ‘less than good status’ is mainly due to the results of macroinvertebrates, chlorophyll and physico-chemical sampling as well as morphological and fish surveys. Several lake water bodies have extended deadlines associated with them due to their location in karst environments.

Water quality in Ireland compares favourably with that in other EU countries. However, similar to many other EU countries, Ireland still faces considerable challenges to meet the core objectives of the WFD within the required timeframes. The three main challenges for water quality management are to eliminate serious pollution associated with point sources; to tackle diffuse pollution; and to use the full range of legislative measures in an integrated way to achieve better water quality. A key element of the Programme of Measures developed to achieve the objectives of the WFD is focused measures on rivers water bodies where monitoring has identified particular causes of pollution, which will help reduce pollutant loading to lakes and coastal waters as well as improving river quality.

5.10.5 Groundwater

Groundwater is defined as the water stored underground in formations of saturated rock, sand, gravel and soils. Surface and groundwater are inextricably linked therefore making it difficult to protect from contamination, particularly in such a vulnerable area as the Drumcliff and Pouladower Springs in Ennis and the large karstic areas of the Burren and West Clare. 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 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 5.10.5** highlights areas of extreme to low vulnerability. A large area in the County is rated as being of extreme vulnerability. In West Clare beyond a line running from Doonbeg to Kilrush and as far west as Cross the vulnerability is classified as low with pockets of extreme along the West Coast from Loop Head to Doonbeg. The characterisation of the bedrock aquifer from which the groundwater vulnerability rating partly derives is depicted in **Figure 5.10.5**. The aquifer is classified by the GSI as “Locally Important” for the area from Ennistymon to Kilrush. It is classified as “Regionally Important Karstified-conduit” for the area extending from Ennis to North Clare. Karst features, present in vast numbers in this latter part of the county, play an important role as conduits for water and pollutants.

Figure 5.10.4 shows the WFD groundwater status in County Clare.

Overall the groundwater status within the County is primarily of good status. Groundwater vulnerability within the Plan area is primarily classified as “rock at or near the Surface or Karst” with areas of extreme and moderate as shown on **Figure 5.10.5**.

Potential pollution sources within groundwater protection zones include numerous small farms, together with illegal dumping, especially in dolines (enclosed depressions) and sinkholes in karstic areas. Much of the area has been developed with scattered rural housing with associated septic tanks. There are also a number of petrol stations within the catchment area, one of which is located close to swallow hole. Incidences of domestic oil tank leakages can also occur posing a potential pollution threat to groundwater

5.10.6 Protected Bathing Waters

The legislation governing the quality of bathing waters is EU Directive (76/160/EEC), transposed into Irish law by the Quality of Bathing Waters Regulations, 1992 (SI No. 155 of 1992). A new Directive on bathing water (2006/7/EC) came into force in March 2006, transposed into Irish law by the Bathing Water Quality Regulations, 2008 (SI No. 79 of 2008), and will repeal the 1976 Directive with effect from 31 December 2014. The 2006 Directive establishes a new classification system for bathing waters (based on microbiological standards) and requires that a classification of at least ‘sufficient’ be achieved by 2015 for all bathing waters. Standards for E.Coli and Intestinal Enterococci will be used to classify bathing waters into four categories (excellent, good, sufficient and poor). Classification will be based on assessment of water quality data over a rolling 4 year period using the data from 2011-2014 inclusive. The purpose of the legislation is to ensure that bathing water quality is maintained and, where necessary, improved so that it complies with standards designed to protect public health and the environment.

Since 2011 transitional measures have been in place whereby bathing water quality is reviewed annually against the microbiological standards of the existing 1976 Directive but using the two new microbiological parameters. This is the last year whereby compliance will be assessed annually based on the percentage (number) of samples meeting the relevant microbiological standards and applying a three tier classification of ‘Good’, ‘Sufficient’ or ‘Poor’ in keeping with previous assessments.

At present E.Coli and Intestinal Enterococci are used to classify bathing waters into four categories of ‘Excellent’, ‘Good’, ‘Sufficient’ and ‘Poor’ in accordance with the 2008 Regulations. These targets represent a further strengthening of measures to protect public health and amount to an almost two fold decrease in the levels of microbiological contamination deemed to be acceptable for bathing waters. In addition to this tightening of standards a minimum target of ‘Sufficient’ will be required to be achieved for all bathing waters. From 2014 onwards classification of status will be based on assessment of water quality data over a rolling 4 year period. The first assessment will use the data from 2011-2014 bathing seasons with compliance being assessed on a percentile (ranked) basis which takes greater account of the spread of the results rather than the percentage pass / fail ratio used in the past.

All of the designated Bathing Waters in County Clare, as shown in **Figure 5.10.6**, have ‘excellent’ bathing water quality status.

5.10.7 Climate Change and Water Quality and Quantity

The specific issues of climate change are difficult to predict, but it is likely that they will add to water quality management issues in the future, both in the areas of flood and drought management. Heavier winter rain storms give rise to flash flooding and land saturation, bringing more significant loads of diffuse pollution into the water bodies. Drought periods can give rise to low water levels and associated difficulties with adequate water quantity for abstraction, to serve the needs of the potable water supply areas.

5.10.8 Flooding

Flooding is a major issue in relation to County Clare, particularly over recent years and the issues of flood risk management; through mitigation and adaptation measures and developing overall resilience to climate change are of critical importance. A strategic approach to the management of flood risk is important in County Clare as the risks are varied and disparate, with scales of risk and scales of existing and proposed development varying greatly across the county.

Following the Planning Guidelines, development should always be located in areas of lowest flood risk first, and only when it has been established that there are no suitable alternative options should development (of the lowest vulnerability) proceed. Consideration may then be given to factors which moderate risks, such as defences, and finally consideration of suitable flood risk mitigation and site management measures is necessary.

It is important to note that whilst it may be technically feasible to mitigate or manage flood risk at site level, strategically it may not be a sustainable approach.

Flooding can be exacerbated by development through removal of flood plain and therefore flood storage, by altering watercourses and increasing surface water run-off. Flooding can also pose a

threat of water contamination due to inundation of waste water treatment systems, agricultural run-off and surface water run-off from developments.

A Strategic Flood Risk Assessment has been undertaken for the Plan area which accompanies the Plan. Flood Risk Zones A, B together with Recorded Flood events are presented in **Figure 5.10.7**. The CFRAM study, which is central to the development of a long-term strategy for the reduction and management of flooding, is anticipated to have draft flood maps for the Shannon River Basin District in the coming months. These will define the current and future flood-risk and set out how the risk can be managed and will correlated to the Flood Risk Assessment undertaken for the plan area.

Requirements for a Flood Risk Assessment

An appropriately detailed flood risk assessment will be required in support of any planning application. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed.

For sites within Flood Zone A or B, a site specific "Stage 2 - Initial FRA" will be required, and may need to be developed into a "Stage 3 - Detailed FRA". The extents of Flood Zone A and B are delineated through this SFRA. However, future studies may refine the extents (either to reduce or enlarge them) so a comprehensive review of available data should be undertaken once a FRA has been triggered.

Within the FRA the impacts of climate change and residual risk (including culvert/structure blockage) should be considered and remodelled where necessary, using an appropriate level of detail, in the design of finished floor levels. Further information on the required content of the FRA is provided in the Planning System and Flood Risk Management Guidelines.

Any proposal that is considered acceptable in principle shall demonstrate the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required), the proposal will demonstrate that appropriate mitigation and management measures are put in place.

5.10.9 Water Conservation

Clean potable water is an important resource that must be protected and conserved. In line with the national average, it is estimated that 46% of the water supplied in County Clare is lost as a result of leakage as well as illegal use of water. In Ennis at the time of preparing this report, the 'unaccounted' for water (UFW) stands at 65 % of water produced. (25 % UFW is considered sustainable in a water network) The production and treatment of the supply of water must be managed in a sustainable manner. In line with national policy and priorities of Irish Water, the Council will comply with the requirement to meter water supplies to assist in the objective to conserve water.

5.10.10 Issues and Threats

There is a significant issue in relation to the use of groundwater for individual wells for houses. There is a need for stringent assessment due to groundwater vulnerability, to assess for sewage leakages,

industrial contamination etc. There is also a public health issue in relation to the contamination of water supplies.

Water usage - Volume of water lost through leakages in pipe infrastructure is not only a local or county level issue but a county wide issue. A significant pipe rehabilitation programme is needed. Further education and information on water conservation and usage for water users is needed.

Domestic oil tank leakages/spills. It is not a requirement for the bunding of domestic oil tanks to reduce any spill or leakage of oil permeating through the soil and potentially contaminating groundwater. The Plan area has a regionally important aquifer with high to extreme groundwater vulnerability over the catchment of the main drinking water supply of Drumcliff Springs which presents a potential threat to human health.

Similarly vehicle refinishing facilities and dry cleaning facilities pose a potential threat to contamination of surface water and groundwater as a result of accidental discharge from certified facilities of waste into drains and sewers, in addition to the possible discharge from facilities that remain unregistered and consequently without any certificate of compliance for their operation.

The main pressures on water quality arise from a number of sources including, agriculture, wastewater and industrial discharges, wastewater from un-sewered properties, over capacity of WWTP and pumping stations, forestry, landfills, quarries, contaminated lands. Water quality can also be affected by water abstraction, land drainage works, and flood protection works. Recreational activities can also give rise to water quality issues.

Water abstraction

In March 2015, Irish Water published a *Project Need Report* which outlined the need for the Eastern and Midlands Region Water Supply Project in a national context. It included assessments of projected population and industrial growth (2014-2050) and savings expected from water conservation and leakage management. Between 2007 and 2011, ten new water supply options for meeting projected growth in water demand in the East and Midlands of Ireland were evaluated at a 'high' level as part of the legal process under the Strategic Environmental Assessment (SEA). Out of the ten Water Supply Options evaluated at this 'high level,' four were identified as technically viable options.

These four Options were independently validated by Irish Water and were found to remain appropriate to be brought forward for further consideration in the planning process. In November 2015, Irish Water published their Preliminary Options Appraisal Report which was based on an extensive assessment process applied to the four potential options. The report has found that two of the four options remain as potential viable solutions; they are the abstraction of water from the lower Shannon at Parteen Basin in Tipperary or desalination of water from the Irish Sea in Dublin. Of these two, the report identifies abstraction of water at Parteen Basin as Irish Water's emerging preferred option.

The proposed water abstraction from Lough Derg could lead to potential ecological, environmental and climate change effects amongst others. **Figure 5.10.9** provides an indication of the four options which have been independently validated by Irish Water which include;

- Desalination (Irish Sea)
- Lough Derg (direct)
- Lough Derg (with storage)
- Parteen Basin (direct) (**Emerging preferred option**)

The Preliminary Options Appraisal Report outlines how the abstraction at Parteen Basin has the least environmental impact of the four options under consideration. It can avail of existing “hydro-power” infrastructure which ensures that the proposed water abstraction can be implemented within existing normal operating water levels and with no impact on statutory flow requirements in the Lower Shannon meaning that there is very limited impact on the lake. According to Irish Water abstraction from hydro-power facilities is common practice worldwide and the Parteen Basin option will use only a small fraction (approximately 2%) of ‘hydro-power’ water that would otherwise have been used for power generation and then discharged to sea. The Preliminary Options Appraisal Report concluded that desalination, as the only other potentially viable option at this stage of the project, is much less suitable than the Parteen Basin option, due primarily to higher costs, being a Dublin centric solution, and being a less environmentally friendly option with a considerably higher energy requirement, chemical usage and being discharge.



Figure 5.10.9 The Preferred Scheme

(Source; Water Supply Project Eastern and Midlands Region <http://www.watersupplyproject.ie/>)

The Water Supply Project underwent rigorous environmental assessment to ensure that all possible relevant factors were examined in reaching a final decision on the best option. As part of that process, a 10 week period of public consultation on the 'Preliminary Options Appraisal Report' was undertaken. Irish Water has now launched the fourth public consultation phase on the Preferred Scheme. This will represent the first major comprehensive upgrade of 'new source' infrastructure in over 60 years and will meet the domestic and commercial needs of over 40% of Ireland's population into the medium to long term future. On 8 November 2016, Irish Water published the Final Options Appraisal Report (FOAR) which identified abstraction from the Parteen Basin in Tipperary as the Preferred Scheme for a new source of water supply for the Eastern and Midlands Region. Alongside the FOAR, Irish Water has also published an Environmental Impact Statement (EIS) Scoping Report. The EIS Scoping Report considers potential issues which may arise from the preferred scheme and describes how any impacts will be assessed.

5.10.11 What would happen to the water resource without implementation of the Plan?

Whilst there is a significant amount of European and national legislation for the protection and enhancement of water resources and quality, the primary issues affecting water quality and flood control such as population increase, loss of floodplain, increased run-off which can be controlled locally through the Plan process will not be adequately addressed. In the absence of the Plan, the process for assessing the issues which affect the surface water and groundwater resources of the County will go unchecked, resulting in a general deterioration in this aspect of the environment.

5.10.12 Data Gaps/Problems

The water quality baseline data is broad. Problem areas will be defined more specifically if more water quality testing locations were introduced across the county. Water Quality Records are continually being monitored. The most up to date information has been utilised but it is accepted this may change during the Plan making process and will be updated accordingly.

5.10.13 Inter-relationship / actions with other environmental parameters

Water quality has a strong inter-relationship with all environmental parameters

	PHH	SG	AC	BFF	L	CH	MAT	MAW	MAWS	MAWW	MARE
W	√	√	√	√	√	√	√	√	√	√	√

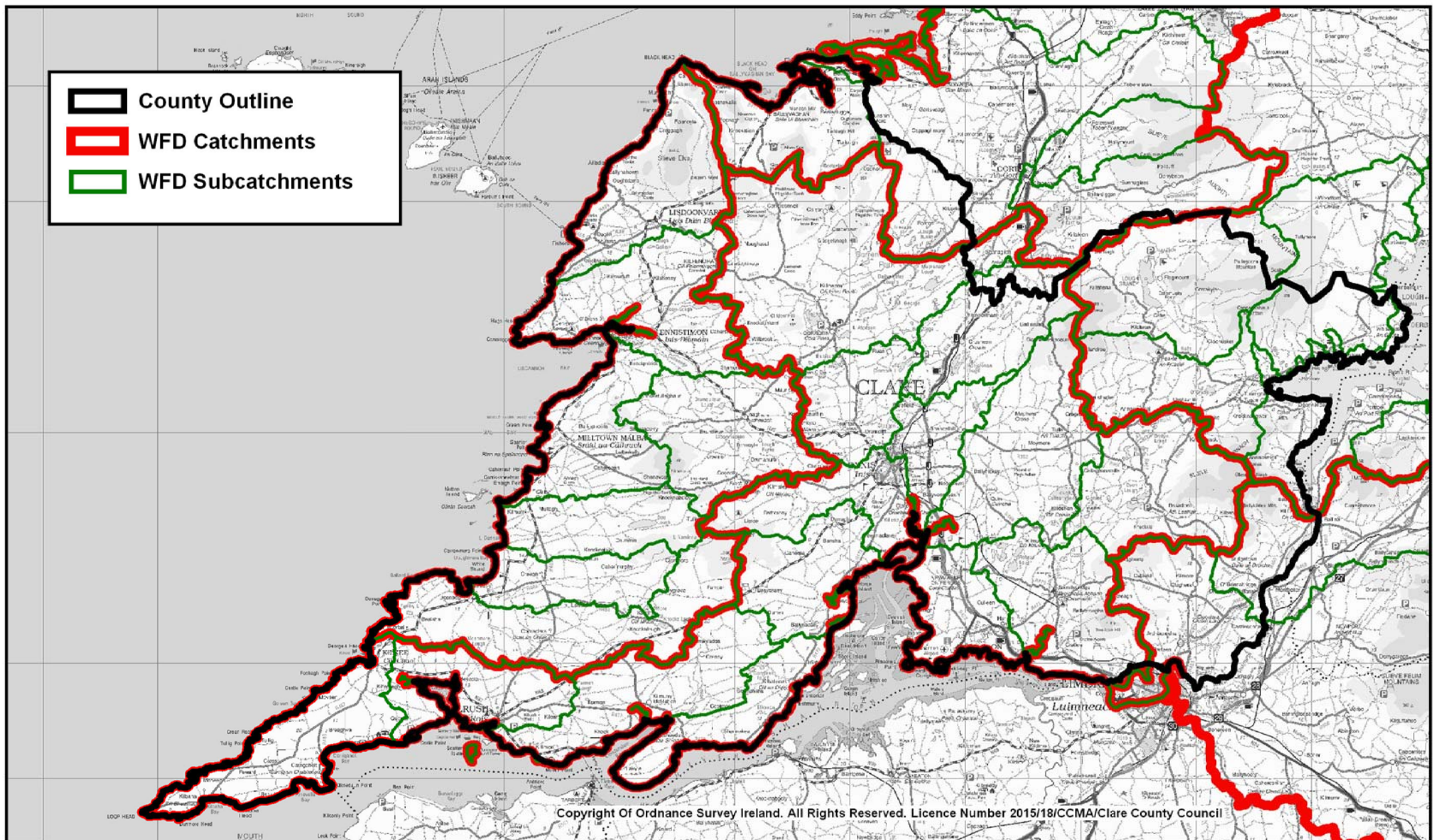
(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage

5.10.14 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Water	Inclusion in the Plan
Water conservation should be a priority in increasing water supply.	Yes through the inclusion of objective 8.23(e)
Protection of European sites should be a priority when selecting sites for drinking water abstraction	Yes through the inclusion of objective 8.21

Issues in relation to climate change and the impacts on water supply and water quality need to be incorporated into the Plan. Although uncertain in terms of how climate change will fully manifest itself, the observed changes and anticipated future change in precipitation patterns and air temperatures e.g. water conservation through on-going pipe rehabilitation, promoting use of grey water and rainwater harvesting.	The interrelationship between climate change and the impacts on water quality and supply are inherent throughout the Plan.
Register and mapping of contaminated sites.	This is included as an objective in the Plan through the requirement to undertake due diligence and remedial works for all contaminated lands.
Register and mapping of oil leakages.	This is not included as an objective in the Plan but can form part of a long term monitoring initiative.
Promote the need for compliance of dry cleaners and vehicle refinishing facilities with the 2014 Regulations and to ensure a best practice approach in relation to operation and waste disposal to remove the risk of discharge and subsequent contamination of surface and/or ground waters.	This is not included in the Plan, however monitoring compliance can form part of a long term monitoring initiative
The measures required for protection of water quality need to be seen as an integrated approach incorporated into the numerous aspects of strategic planning and land use zoning.	Yes.
Flood Plains as natural flood storage areas should be protected from development.	Yes in corporate through the zoning analysis in Volume 3 and the associated SFRA.



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.1 WFD Catchments and Subcatchments

SCALE: NOT TO SCALE

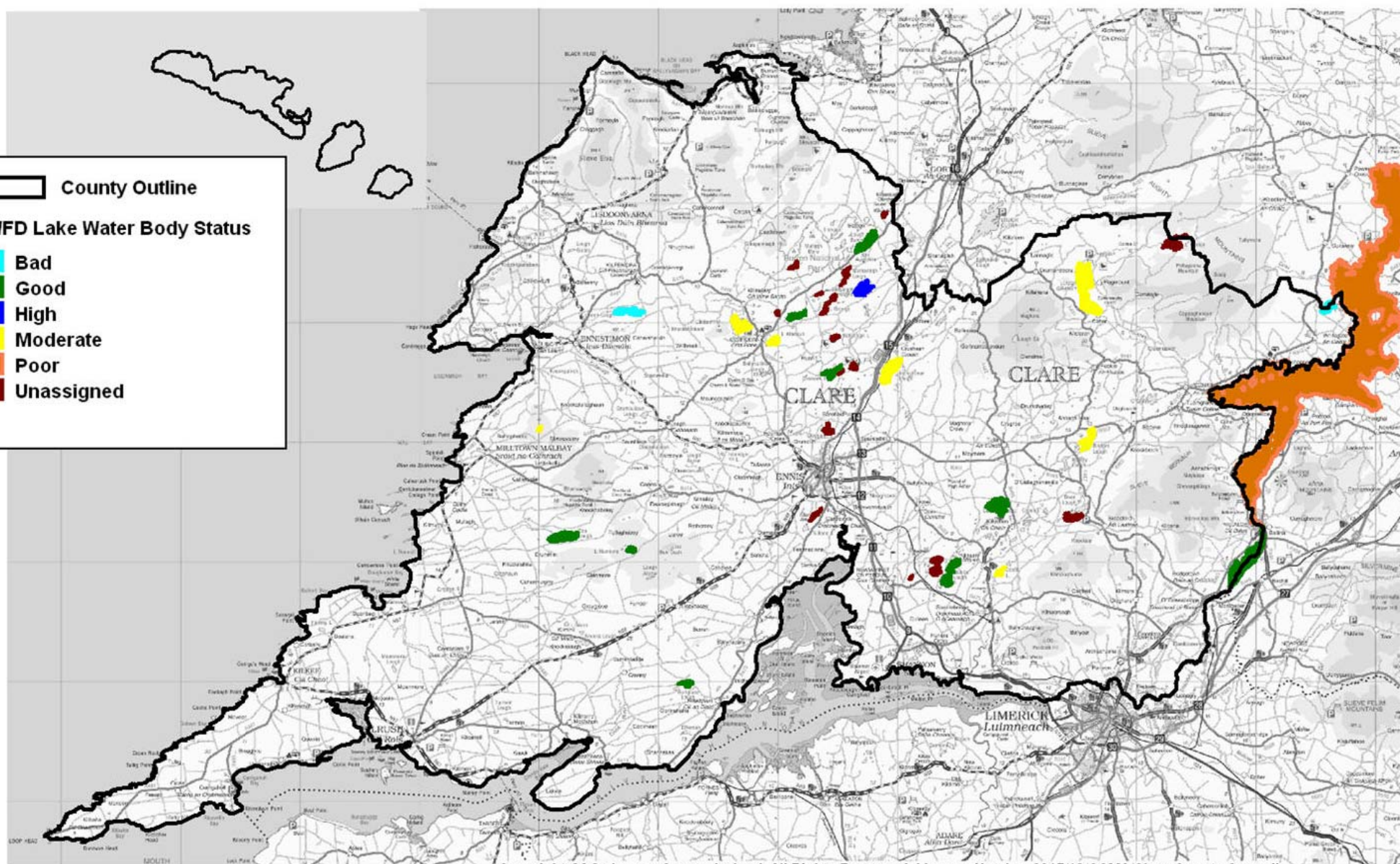
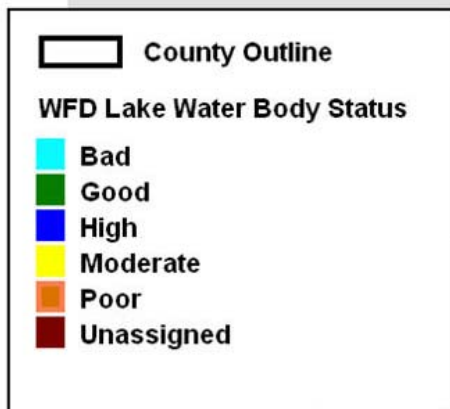
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.3 Water Framework Directive - Lake Waterbody Status

SCALE: NOT TO SCALE

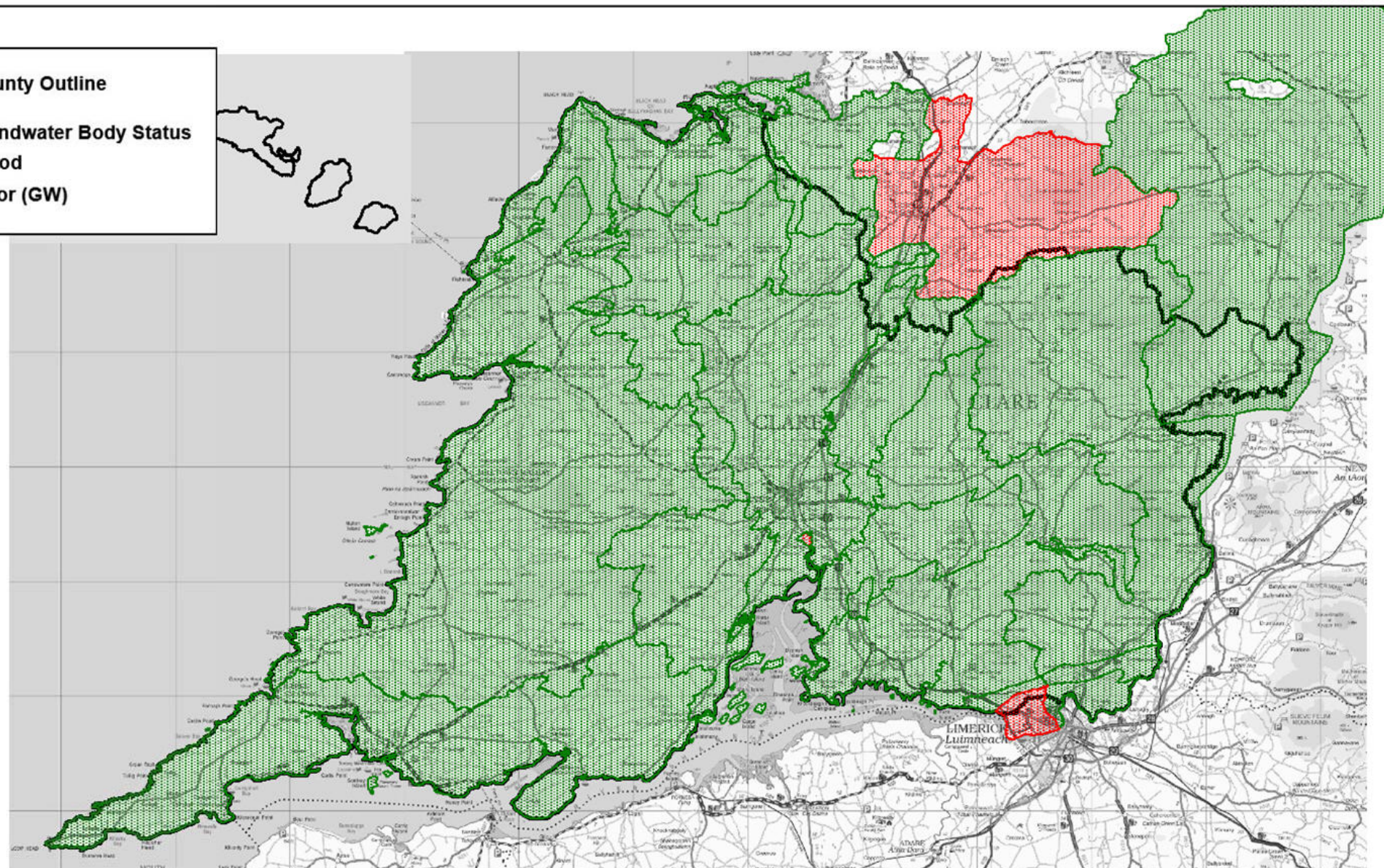
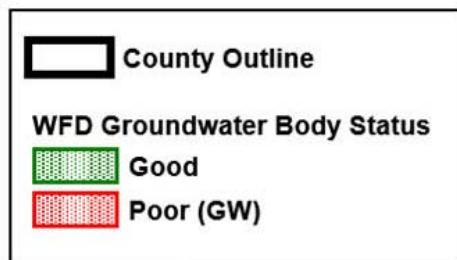
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae an Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.4 Water Framework Directive - Groundwater Body Status

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.







DATE:
January 2017

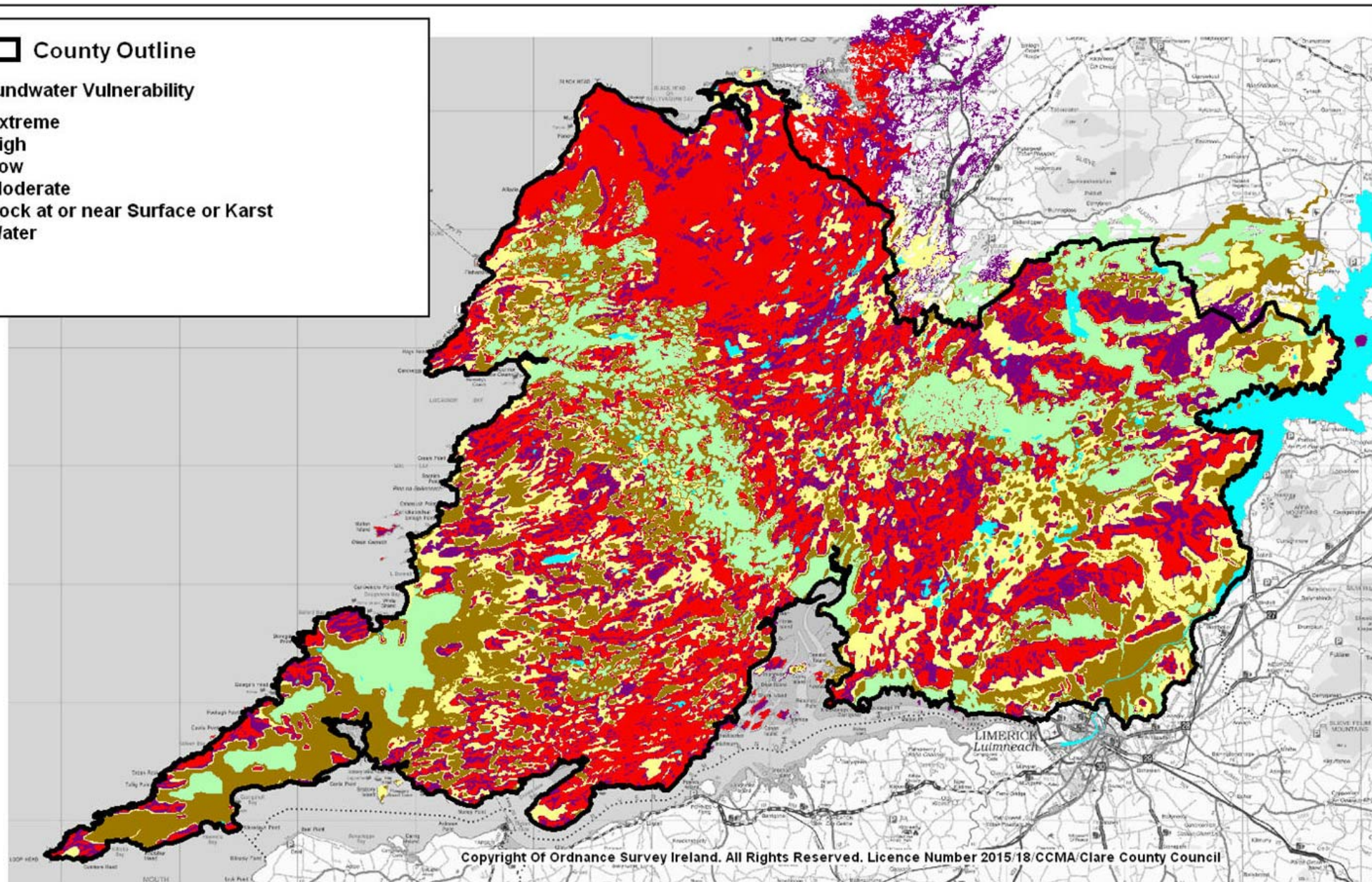
DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

 County Outline

Groundwater Vulnerability

-  Extreme
-  High
-  Low
-  Moderate
-  Rock at or near Surface or Karst
-  Water



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.5 Groundwater Vulnerability

SCALE: NOT TO SCALE

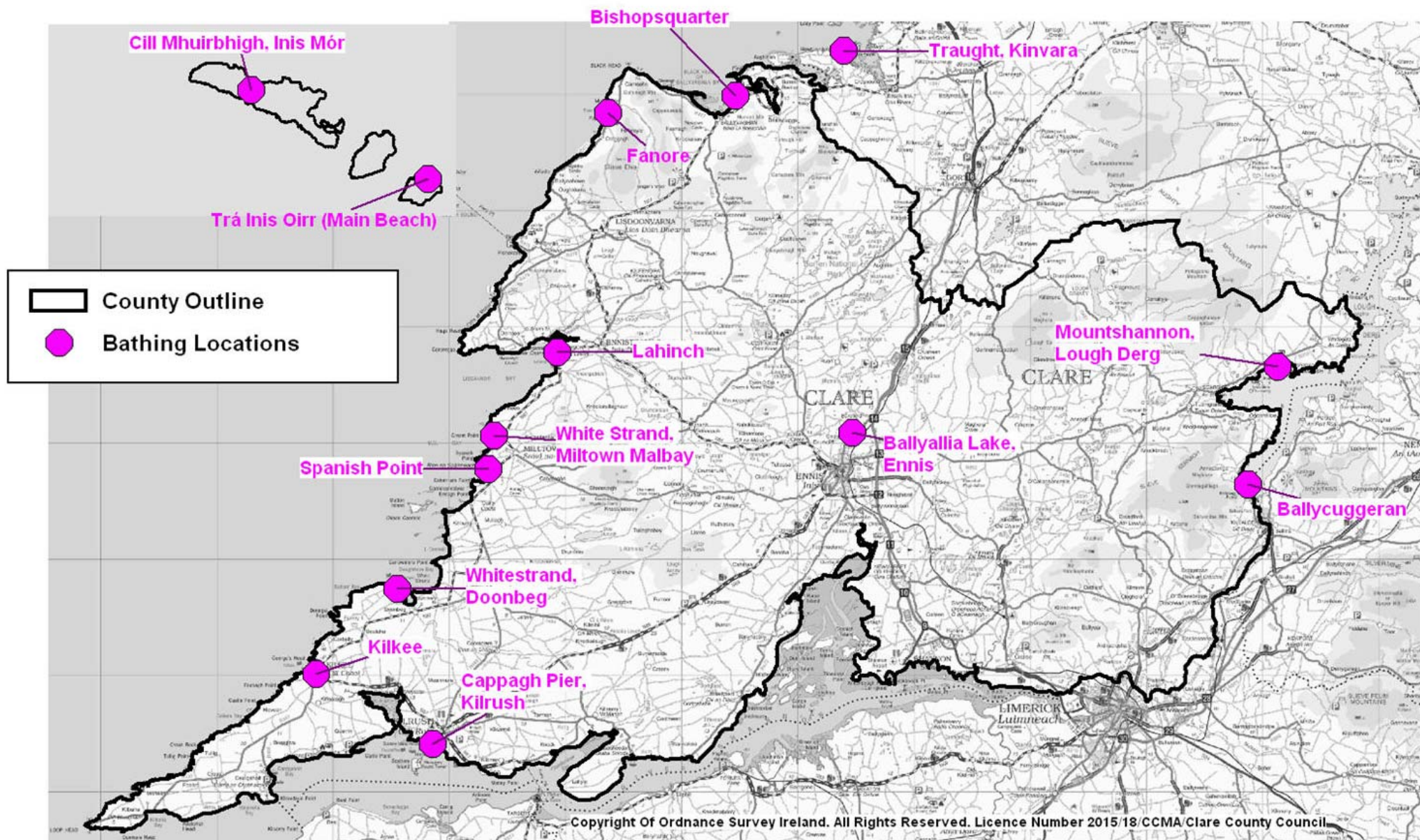
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae an Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.6 Bathing Locations

SCALE: NOT TO SCALE

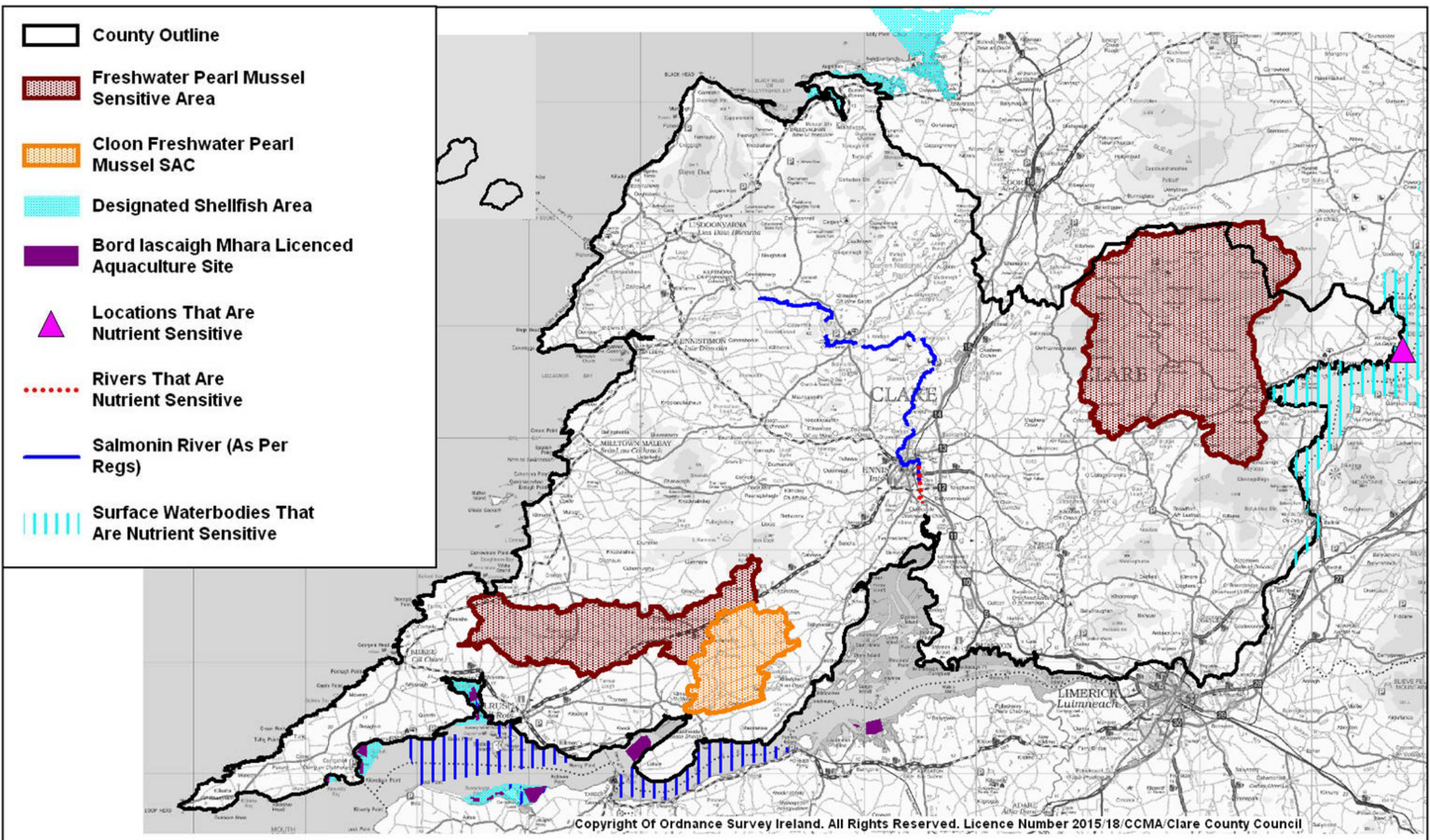
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.10.8 Aquatic Ecology and Aquaculture Sites

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.11 Material Assets

5.11.1 Introduction

Material assets are defined as the critical infrastructure essential for the functioning of society such as water supply, wastewater treatment, transportation etc. This section will address the following:

1. Transportation
2. Waste Management
3. Water Supply
4. Wastewater Treatment Infrastructure
5. Renewable and alternative energy

5.11.2 Transportation

Access to an efficient transport network contributes to opportunities for all sectors of the population to access services, facilities and social networks that are necessary to meet daily needs. Ease of accessibility enhances quality of life, promotes social inclusion, presents opportunities and promotes human health through expansion of cycle and walking infrastructure.

Road Network

The road network in the county is made up of motorway, national primary roads, and national secondary roads, regional and local roads. County Clare has a large rural area with a dispersed population with the result that the car is the predominant mode of transport. The maintenance and upgrade of the existing road network and, where necessary, the provision of new road networks or realignments are essential to achieve modern high standards.

The existing main roads include; the M18 motorway which by-passes Ennis, connects the town to the national motorway network and two National Primary Routes, the N18 Galway-Limerick and the N19 which starts at Shannon Airport and leads on to the N18. (See **Figure 5.11.1**). The National Secondary roads include the N85 Ennis-Lahinch, N67 Killimer-Ballyvaughan and the N68 Ennis to Kilrush routes.

The M18 has much improved road connectivity nationally, reducing travel times significantly to Dublin, Cork, Limerick and Galway, with the section of the M18 between Gort and Galway scheduled to commence in October 2014. It has also contributed to a significant benefit in reduced local travel patterns to places of employment, including Shannon.

Bus Network

Bus Eireann operates regular services from their centrally located newly refurbished bus station to Shannon Airport, Galway, Limerick, Cork and Dublin. Private operator, Dublin Coach also operate several (up to 25 during peak times) daily express services between Ennis, Limerick, Kildare and Dublin. Bus Eireann also provides an infrequent service from Ennis to north and west Clare and a regular service to Shannon Airport.

Local Services are provided for by Clare Bus, a not-for-profit bus service, which has a large number of routes that connect Ennis with its extensive rural hinterland. The services provided are designed to support communities and increase transport options at a local level while opening up access to the national transport network. The route schedules connect with national transport links provided by Bus Eireann, Dublin Coach and Irish Rail in Ennis.

Rail Network

The rail services within County Clare consist of a branch off the Limerick line which serves Ennis. Land has been designated for a new station and park and ride facility at Clarecastle. The Western Rail Corridor has been opened recently and it involved upgrading 36 miles of track and associated infrastructure, as well as the provision of five stations at Gort, Ardahan, Craughwell, Sixmilebridge and Oranmore. Ennis is situated on the western rail corridor which has undergone substantial investment over recent years. Ennis rail and bus station is located within walking distance of the town centre of Ennis. There are park and ride facilities at the station. The regular routes serviced from Ennis include a Limerick/Dublin service, Limerick/Cork/Tralee and Galway/Limerick services.

Air

Shannon Airport is located within the southern part of the county. It is a critical element of the transport network in the region with both a national and international role. It is strategically located between Limerick and Galway with capacity to serve an increased market to the west should future development take place in the Shannon Estuary which requires air transport. The Airport boasts the longest runway in Ireland, at 3,199 metres in length, 45 metres wide and in operation 24 hours per day, 365 days per year with 24 stands. The Airport has both scheduled and chartered flights to a range of destinations and has 30 aircraft stands. In 2000, the new terminal building at Shannon Airport was opened. The Mid-West RPGs highlight the importance of Shannon International Airport as a key hub both for national and international air travel. Aviation is vital to the future business of the country in terms of tourism and trade and connectivity between airports and public transport is a key element of this.

Climate Change and Transportation

Transportation networks will increasingly need to adapt to cope with effects of a changing climate evidenced by an increase in incidences of flooding and high temperatures resulting in droughts, both attributable to a recognised trend of an increase in extreme weather events. Resilience to these changes needs to be integrated into future and existing networks and services in order to maintain an efficient transportation network. This could materialise in a number of ways, for example, by improving cooling and heating systems within vehicles; provide adequate surface water attenuation ponds to cope with increased levels of surface water as result of increased rainfall; integrate and plan provision of alternative service route options for public and private transport networks where areas are known to experience flooding.

5.11.3 Waste Management

Clare falls under the Southern Region Waste Management Plan area for which the management plan was published in May 2015. Within the County Development Plan Area there are a range of waste recycling facilities which include 5 recycling centres and transfer stations as follows;

- Central Waste Management Facility, Inagh
- Ennis Recycling Centre, Ennis
- Lisdeen Recycling Centre and transfer station, Kilkee
- Scarriff recycling centre and transfer station, Scarriff
- Shannon recycling centre

Domestic and commercial waste collection is undertaken solely by private permitted collectors, which include waste separation to aid waste recycling. There is an extensive education and awareness programme of waste prevention initiatives in order to minimise waste going to landfill.

Cork County Council has been appointed Lead Authority for Waste Enforcement in the Southern Region in 2015. The Southern Region extends from Counties Kerry and Clare on the west coast to County Wexford on the east coast, and includes the Counties of Cork, Limerick, Tipperary, Waterford, Carlow and Kilkenny and includes Cork City. Cork County Council will now take on the responsibility of co-ordinating and overseeing the enforcement of waste regulation on behalf of all 10 local authorities in this large region thereby ensuring a consistent and equitable approach is taken to providing a “level playing field” for all stakeholders in the industry. Following the publication in 2012 of "Putting People First" government policy has been moving towards the delivery of certain public services on a regional basis. The Regional Framework recognises 3 no. regions, Southern Region, Connaught/Ulster Region, and the East/Midlands Region. Government waste policy as outlined in "A Resource Opportunity" 2012 recognises that to protect Ireland's environment and the health of its citizens, a consistent and effective approach to enforcement of the regulatory framework is required.

5.11.4 Water Services Infrastructure

The responsibility for the provision and management of water services (water supply and wastewater but excluding storm/surface water other than where sewage has been combined with surface water) was transferred to Irish Water on the first of January 2014. Whilst Clare County Council no longer has a remit in the management and provision of water and wastewater infrastructure, this development plan sets out the water services infrastructure priorities for residents, business and stakeholders in Clare. Irish Water is committed to providing strategic treatment capacity to facilitate the core (residential) strategies identified in this county development plan, subject to the availability of funding and environmental constraints.

Irish Water is currently analysing water services infrastructure needs at a national level and identifying priority projects for inclusion in the next Capital Investment Plan (CIP 2017-2022). Priorities must include investment to ensure acceptable service levels to existing customers, achieving regulatory compliance. Requirements to cater for future growth are also being considered. The CIP will be evaluated by the Commission for Energy Regulation who will approve or otherwise the budget presented by Irish Water for capital investment in infrastructure.

Water Supply

Irish Water is currently carrying out a strategic review of water supply in the Mid-West Region. Initial indications are that the Clareville Water Treatment Plant in Limerick, which currently serves Limerick City and its environs, has the capabilities to supply a large regional area within in the Mid-West. This could include augmentation of the Shannon/Sixmilebridge and Ennis Water Supply Schemes, utilising the existing pipe network installed on the N18 and N85.

In general, there is sufficient water supply treatment capacity in the county to meet the needs of the target population identified in the core strategies (See **Figure 5.11.2** for the geographical locations of the 23 Water Treatment Plants in Clare). Many of the water treatment plants supply water to a number of settlements in a “Water Supply Zone”(WSZ) and WSZs may be linked together to form a water resource zone. It is Irish Waters objective to interlink WSZs, where appropriate, to increase the resilience (reliability) of the water supply system. Network reinforcement is likely to be required to ensure that water supply can be moved around the network to where it is needed. In addition, many of the water treatment plants in the county need upgrading in order to ensure that water is produced to the required standards as set out in the relevant Drinking Water Regulations.

Water Safety Plans

A Water safety plan is a plan to ensure the safety of drinking water through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment management, the treatment plant and through to the consumers tap. The principles and concepts of risk management are used and then a multi-barrier approach to reduce the risk is put in place.

Water Supply and Climate Change

The onset of climate change and predicted change in weather patterns, culminating in an increase in dry spells of weather and of rain surges, have potential implications on water supply. Already the water supply sources within the county comes under strain during more prolonged spells of dry weather, which are set to increase in years to come. Measures need to be put in place to adapt to predicted weather changes in terms of ensuring an adequate supply of clean water to the existing and future population of the plan area.

Wastewater Treatment

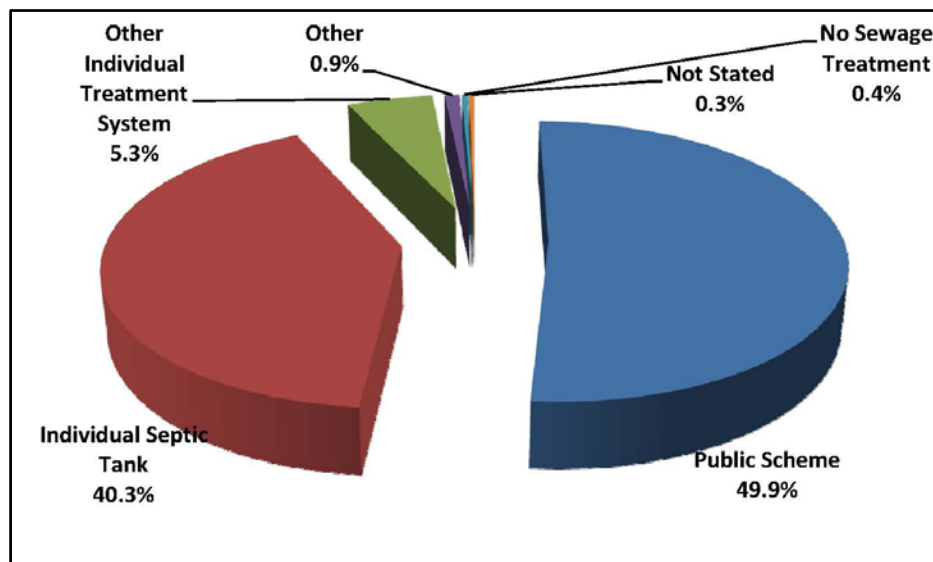
The Urban Wastewater Treatment Directive (91/271/EEC, amended by Directive 98/15/EEC) aims to protect the environment from the adverse effects of wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. Such treatment is essential in order to meet the requirements of the WFD.

Wastewater within the county is treated either through wastewater treatment plants (48%) or individual septic tank units (44%). Many of the buildings which are located outside of the larger towns and villages are not connected to the public wastewater disposal system, and the effluent must be treated by individual proprietary wastewater treatment plants and septic tanks. There are 31 urban wastewater treatment plants in County Clare.

Wastewater services tend to be associated with individual settlements/agglomerations and there are significant service and compliance issues in many existing wastewater systems in Clare. The safe treatment and disposal of sewerage is fundamental to the sustainable development of our society. The treatment of wastewater is either through wastewater treatment plants or individual septic tank units.

Irish Water has responsibility for provision and management of wastewater facilities serving sewered towns and villages, including the management of storm water. The maintenance, upgrading and provision of the County's wastewater drainage system is essential to accommodate future development requirements and to ensure the sustainable development and environmental protection of the county. At present there are significant service and compliance issues in many existing wastewater systems in County Clare. **Figure 5.11.3** summarises the percentage by 'Types of Wastewater Systems in County Clare'. **Figure 5.11.4** provides the geographical location of Waste Water Treatment Plants across the county.

Figure 5.11.3 Types of Wastewater Systems County Clare 2011



Source CSO 2011

Outside of the larger towns and villages most developments in County Clare are treated by individual proprietary wastewater treatment plants and septic tanks. Developments in these unserved areas must demonstrate that the onsite on-site wastewater treatment system can safely and adequately dispose of effluent in accordance with the relevant EPA *Code of Practice*.

5.11.5 Renewable and Alternative Energy

The term 'renewable energy' refers to those energy flows that occur naturally and repeatedly in the environment including the sun, wind, oceans and the fall of water. Geothermal energy, plant material and combustible or digestible agricultural, domestic or industrial waste may also be regarded as renewable sources of energy. The Council recognises the importance of developing renewable energy sources in the interest of achieving a low carbon economy and security of energy supply.

A Wind Energy Strategy and a Renewable Energy Strategy have been prepared for County Clare and comprise Volumes 5 and 6 of this plan respectively. The Wind Energy Strategy identifies the optimum locations for wind energy developments in the county having regard to environmental and geographical constraints and the protection of the amenities of local residents. A new Wind Energy Strategy will be prepared for County Clare during the lifetime of this plan.

The Clare County Renewable Energy Strategy (RES) (Vol. 6 of the CDP 2017 – 2023) sets out the renewable energy resource targets for County Clare up to 2020. It outlines the potential for a range of renewable resources, including Bioenergy (Biomass) and Anaerobic Digestion, Micro Renewables, Geothermal & Ground Source Heat Pump, Solar, Onshore Wind, Marine Renewables (Wave and Tidal Energy), Pumped Hydro Energy Storage and Micro Hydroelectric Power. It acknowledges the significant contribution such renewables can make to County Clare, becoming more energy secure and less reliant on traditional fossil fuels, thus enabling future energy export and meeting assigned targets.

Table 5.11.1 provides a summary of the principal energy and emissions data based on the fuel type consumed in County Clare. In addition **Table 5.11.2** provides a breakdown of the fuel consumption on a sector by sector basis indicating transport as the highest consumer within the county.

Table 5.11.1 County Clare Energy Consumption – 2010 - 2020 by Fuel

County Clare Energy Consumption – GWh / yr – By Fuel	2010	2020 Baseline	2020 NEEAP/NREAP
Electricity	682.0	775.7	750.2
Natural Gas	505.1	613.3	468.1
Oil	2,185.3	2,399.4	2,034.8
Coal	111.3	55.4	52.1
Peat	77.5	42.4	39.0
Renewables	108.0	109.7	294.0
Grand Total	3,669.2	3,995.9	3,638.3

Table 5.11.2 County Clare Energy Consumption – 2010 - 2020 by Sector

County Clare Energy Consumption – GWh / yr – By Sector	2010	2020 Baseline	2020 NEEAP/NREAP
Agriculture	153.1	212.5	212.5
Commercial	500.2	568.5	460.7
Industry	724.7	798.9	787.1
Residential	997.1	967.8	774.1
Transport	1,294.1	1,448.1	1,403.8
Grand Total	3,669.2	3,995.9	3,638.3

The **NEEAP/NREAP scenario** accounts for both the National Energy Efficiency Action Plan (NEEAP) and the National Renewable Energy Action (NREAP).

The NREAP details a pathway for Ireland to meet the binding commitments of 16% Renewable Energy Share (RES) of national energy consumption and a 10% RES of road and rail transport consumption (RES-T) by 2020.

The NEEAP outlines how Ireland will achieve 20% energy efficiency savings, calculated on the basis of the average energy demand from 2001 to 2005. Central to this are the policies and measures identified by government to enable Ireland to achieve these targets.

The Exploratory Risk scenario looks at the risks to achieving the energy efficiency and renewable energy targets and takes a pessimistic view as to whether the challenges associated with policy implementation in these areas will be met. For example, the Exploratory Risk scenario takes the view that only 50% of the remaining future energy savings required to meet the target will be achieved.

Table 5.11.3 County Clare Evolution of Energy Emissions (,000T / CO₂) – 2010 - 2020 by Sector

Clare County Evolution of Energy - CO ₂ Emissions (KT-CO ₂) 1990 - 2020						
Year	Agriculture	Commercial	Industry	Residential	Transport	Grand Total
1990	41.7	85.5	169.5	235.3	144.6	676.6
2000	53.8	132.4	290.7	257.8	253.2	987.9
2005	56.4	169.4	285.8	285.5	346.6	1143.7
2010	42.4	143.1	187.2	278.1	326.7	977.5
2020 Baseline	58.9	156.4	205.4	259.4	363.3	1043.4
2020 NEEAP/NREAP	54.3	94.8	162.4	186.0	331.5	829.0

Figure 5.11.4 County Clare Evolution of Energy Consumption (GWh / yr) – 2010 - 2020 by Fuel

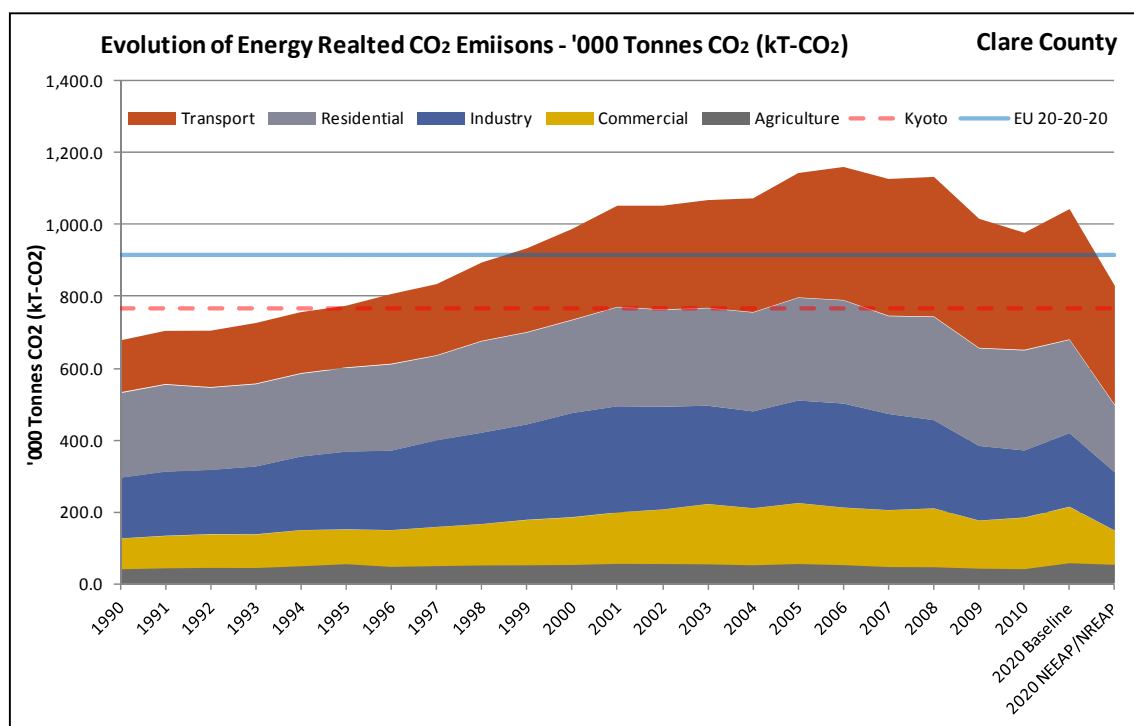


Figure 5.11.5 National Energy Efficiency Action Plan 2 – Savings apportioned to Clare County

The following table sets out the savings for energy and energy related CO₂ emissions for County Clare based on the National Energy Efficiency Action Plan. The amounts are apportioned from the National figures based on proportion of energy consumed.

Table 5.11.4 Savings for energy and energy related CO₂ emissions for County Clare.

NEEAP 2 - County Clare	Energy savings (GWh PEE)			%	CO ₂ savings (kt)		
	2010	2016	2020		2010	2016	2020
Public Sector			97	9.5%			21.9
Public Sector Programme	2.25	19.35	37.65		0.51	4.47	8.43
Green Public Procurement (via ACA)	0.75	4.65	8.55		0.15	0.99	1.77
SEEEP and EERF (public sector)	2.7	2.7	2.7		0.63	0.6	0.6
Public Sector Building Demonstration Programme	4.2	4.2	4.2		0.99	0.96	0.93
CHP (public sector)	3.6	4.8	5.55		0.87	1.14	1.35
ReHeat (public sector)	3.3	3.75	3.75		0.78	0.9	0.9
Public transport efficiency	2.7	4.8	4.8		0.69	1.2	1.2
Better Energy (public sector)	0	15	30		0	3.42	6.69
Business			175	17.1%			40.0
SEAI Large Industry Programmes	47.85	67.05	81.9		11.94	16.17	19.26
SEAI SME Programme	4.5	12	15.15		1.08	2.73	3.39
ACA (private sector)	1.65	11.1	20.7		0.39	2.4	4.2
SEEEP and EERF (private sector)	5.25	5.25	5.25		1.26	1.23	1.2
CHP (private sector)	8.4	11.1	12.9		2.04	2.7	3.12
ReHeat (private sector)	7.5	8.7	8.7		1.83	2.1	2.1
Better Energy (Commercial sector)	0	15	30		0	3.42	6.69
Continued overleaf....							

Table 5.11.5 National Energy Efficiency Action Plan 2 – Savings apportioned to Clare County

NEEAP 2 - County Clare	Energy savings (GWh PEE)			%	CO2 (kt)	savings	
	2010	2016	2020		2010	2016	2020
Continued...							
Buildings			458	44.8%			109
2002 Building Regulations -Dwellings	38.4	38.4	38.4		9.36	9.36	9.36
2008 Building Regulations -Dwellings	2.55	36.3	63.3		0.63	8.85	15.42
2011 Building Regulations -Dwellings	0	11.4	25.05		0	2.79	6.09
Building Regulations - Nearly Zero Energy Dwellings	0	0.45	6.75		0	0.09	1.65
2005 Building Regulations - Buildings other than dwellings	5.55	9	9		1.35	2.16	2.13
2012 Building Regulations - Buildings	0	11.7	25.95		0	2.79	6.15

other than dwellings							
Energy efficient boiler regulation	6	24	36		1.47	5.85	8.79
Domestic Lighting (Eco-Design Directive)	6	36	36		1.41	7.77	7.26
Greener Homes Scheme (GHS)	3.6	3.6	3.6		0.84	0.84	0.84
Warmer Homes Scheme (WHS)	3.75	3.9	3.9		0.99	0.99	0.99
Home Energy Saving (HES) scheme	10.95	10.95	10.95		2.7	2.7	2.7
Smart Meter roll-out	0	11.25	18.75		0	2.4	3.78
Better Energy Homes (residential retrofit)	0	90	180		0	22.2	44.28
Mobility-Transport			160	15.6%			40.8
Electric vehicle deployment	0	7.95	20.7		0	2.04	5.25
Vehicle registration tax (VRT) and annual motor tax (AMT) rebalancing	5.55	24.75	19.65		1.41	6.33	5.04
Improved fuel economy of private car fleet (EU Regulation)	5.7	47.25	90.45		1.44	12.06	23.07
More efficient road traffic movements	0	11.25	21.45		0	2.88	5.46
Aviation efficiency	7.65	7.65	7.65		1.95	1.95	1.95
Energy Supply			132	13.0%			17.9
Electricity generation efficiency improvements	50.7	50.25	121.65		12.66	8.79	15.72
Transmission and distribution savings	8.25	9.75	10.8		1.98	2.13	2.19
Totals	249	635	1,022	100.0%	61	149	230

5.11.6 Climate Change and Critical Infrastructure

Flood events and possible consequent risk of subsidence may have a significant impact on critical infrastructure such as roads, rail, electricity, water and communications. This in turn would have a potential impact on productivity, economic confidence and general social wellbeing. Hotter summers could also place an additional stress on key infrastructure.

5.11.7 Issues and Threats

- Neighbourhood centres served by domestic sewers – the disposal of hot counter/takeaway cooking oils etc. can cause accumulation of fats and oils and impact on residential sewage lines. Where these uses need to be accommodated use mitigation re education re proper disposal of such things.
- Problem of pumping station maintenance and potential risk of pollution as a result of operation malfunction. A pump health check should be undertaken during the lifetime of the Plan.
- Developments that are being considered should include an assessment of where the effluent is going and as to whether there is the pumping capacity to cope with the additional load that the development will generate.
- Promote water harvesting and conservation.

- There is a need to increase energy efficiency and conservation within County Clare and it is obliged to reduce energy and CO2 emissions by 33% by 2020.
- For offshore wind developments, there is a lack of a National Marine Spatial Strategy, along with the need to balance the installation of such developments with fishing, aquaculture, tourist and navigational needs and interests.
- There is insufficient waste water treatment to cater for existing and projected population growth within some settlements across the county. Therefore there is a need to provide additional wastewater treatment infrastructure/ capacity.
- Additional pressures on the environment come from poorly functioning septic tanks which place pressures on surface and groundwater's.
- The travel patterns in Clare are governed to a large extent by private cars. Therefore there are existing pressures on ensuring that the transport network is adequate and maintained. There is a need to look at the provision of public and/ or community transport service options to ensure that the existing and future population growth of County Clare has sufficient access to public transport.
- Lack of a security of supply for thermal treatment facilities is recognised as a threat, as is the lack of adequate facilities for biological waste treatment. New waste management regions, as outlined in the
- There is high technical potential for hydro power in Clare given the county's large coastline and water resources. Clare has a history of utilising hydro power (e.g. Ardnacrusha hydroelectric power station) –however realistic plans will be influenced by specific site conditions. Developments could also be influenced by fishery interests and seasonal water flow, and balanced with the needs of tourism. Other constraints include establishing adequate grid connections and lack of interconnections with neighbouring countries (connected countries can buy and sell power during seasonal fluctuations without the need to store energy); the need to be in close proximity to existing wind energy developments, high capital costs and policy gaps at the National and Regional level (currently no guidance for energy storage or site selection) are other considerations.
- While Pumped Hydroelectric Energy Storage (PHES) is the most mature and largest energy storage technique available, these developments are also constrained by high capital costs, long lead-in times and policy gaps at the National and Regional levels.
- All renewable energy developments have the potential to effect or impart environmental pressures in particular on biodiversity, habitats/designated areas and water quality, in addition to the visual impact to scenic landscapes and settlements.

5.11.8 What will happen to material assets without the implementation of the Plan?

The current legislation which provides for the protection and enhancement of the 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 the Clare County Development Plan 2017-2023 there would not be a planning framework to regulate and control development in accordance with specific local issues in relation to potable water, wastewater treatment, flooding and

development. This could result in significant impacts across a range of environmental parameters including biodiversity, water, human health, landscape and soil and geology.

5.11.9 Data gaps/difficulties

- Traffic surveys to inform the preparation of a traffic management plan.
- Accurate measurements of water leakages to allow for monitoring effectiveness of rehabilitation measures to reduce water loss.

5.11.10 Inter- relationships

	PHH	SG	W	BFF	CH	L	AC
*MAT	√	√	√	√	√	√	√
*MAW	√	√	√	√	x	√	√
*MAWS	√	√	√	√	x	√	√
*MAWW	√	√	√	√	x	√	√
*MARE	√	√	√	√	x	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;

5.11.11 SEA Recommendations *

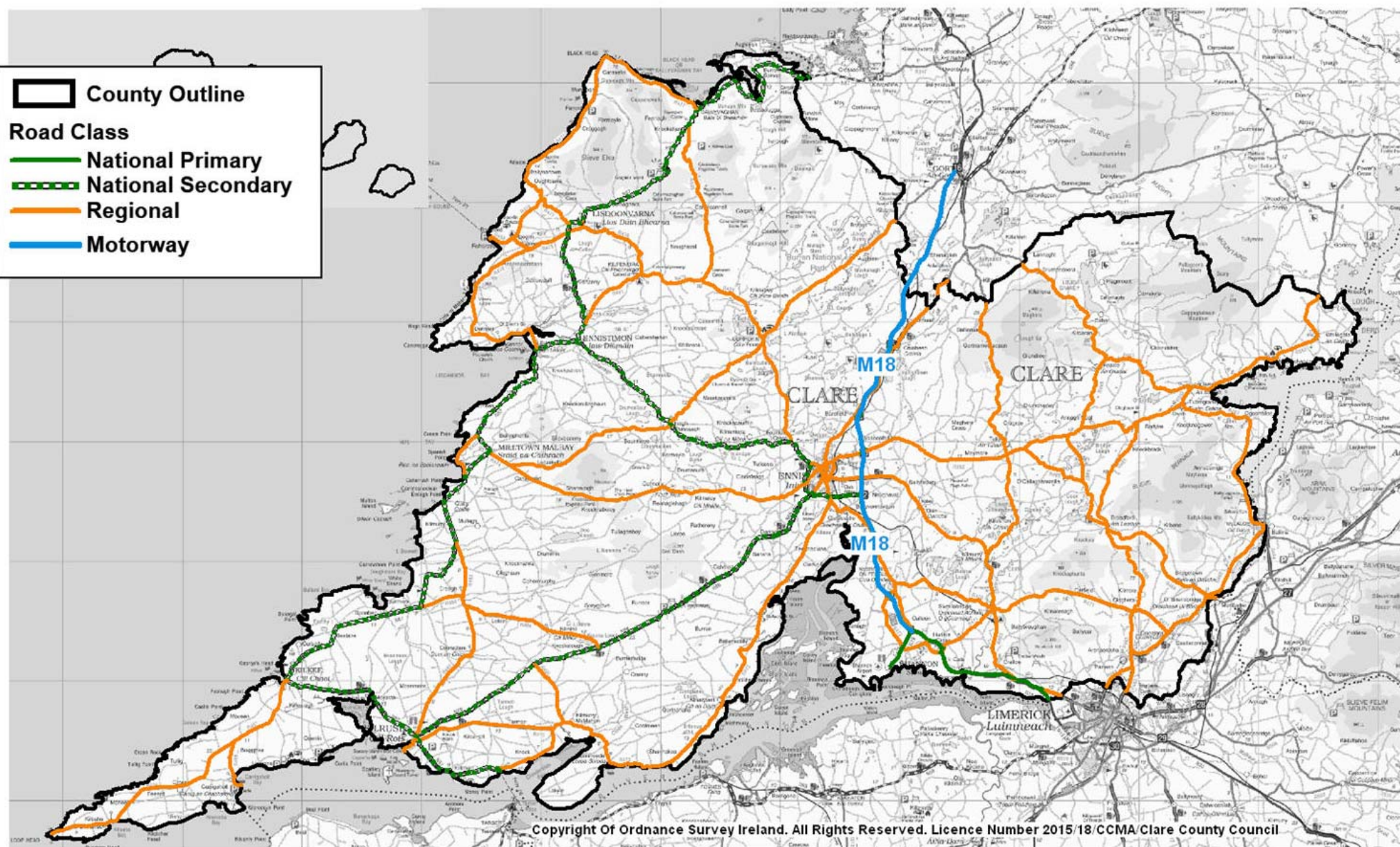
*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Material Assets	Inclusion in the Plan
Transportation Promote sustainable travel by providing for the development of greenways/walkways/cycleways, in conjunction with green infrastructure, within the Plan area. Prepare and implement a Sustainable Traffic Management Plan for the plan area in conjunction with improved pedestrian mobility and permeability for the town centre. Undertake the necessary traffic surveys to inform the preparation of a traffic management plan. Utilise and upgrade existing laneways in improving permeability.	Yes through the inclusion of objective 8.10. No specific objective relating to Sustainable Traffic Management was included in the Plan.
Water Supply Monitor water leakages to measure improvement from pipe rehabilitation works. Monitor water usage through metering.	Yes this will be achieved in collaboration with Irish Water and through the inclusion of specific water conservation measures as per objectives 8.22
Waste Water Treatment Infrastructure Include an objective which requires development proposals to be adequately served by wastewater treatment which complies with the Water Framework Directive 2000, the EU Urban Wastewater Directive and the Habitats Directive.	Yes through the inclusion of objective 8.25

County Outline

Road Class

- National Primary
- - - National Secondary
- Regional
- Motorway



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.11.1 Road Network

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

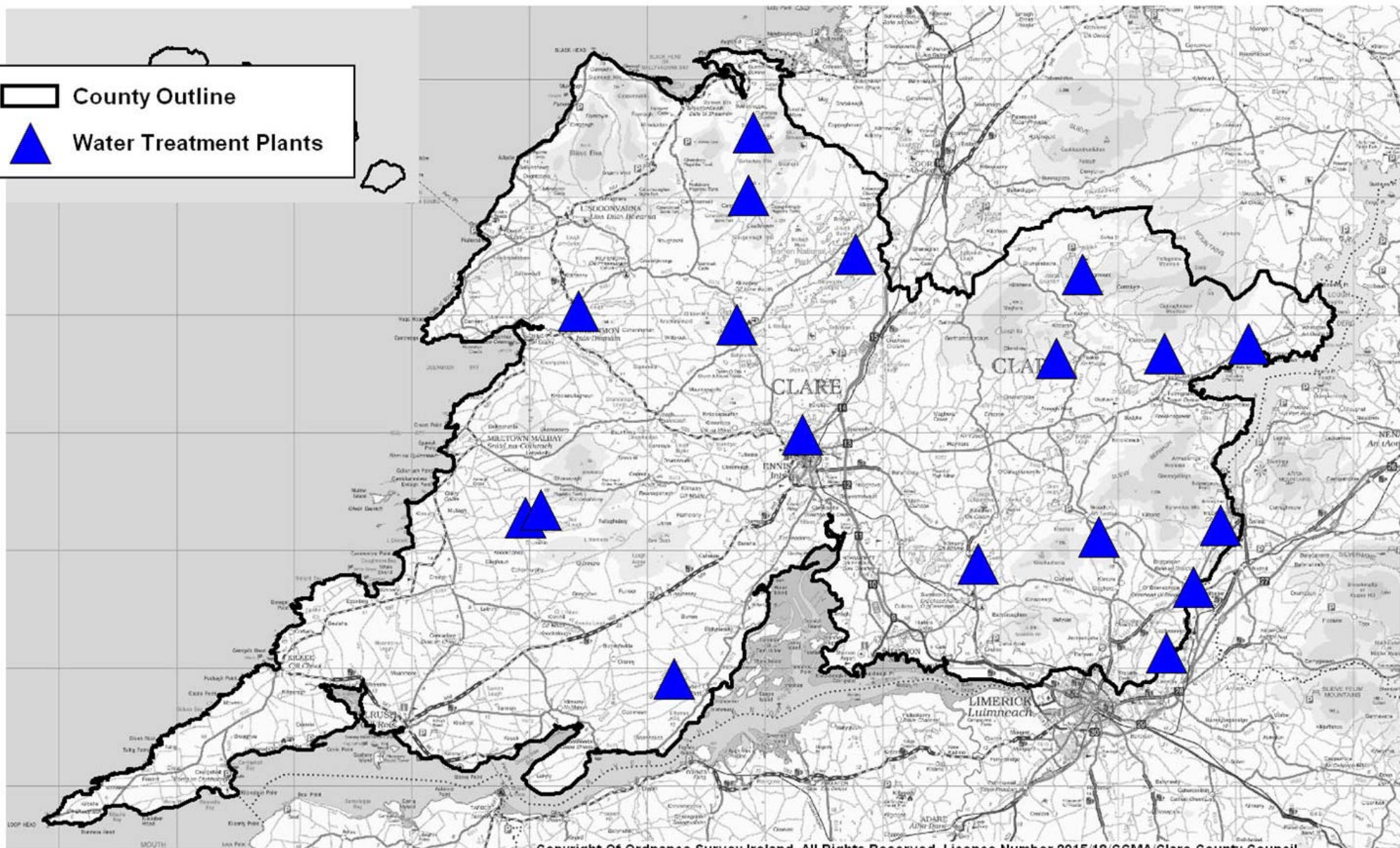
DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

County Outline

Water Treatment Plants



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



Clare
County
Council

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.11.2 Water Treatment Plants

SCALE: NOT TO SCALE

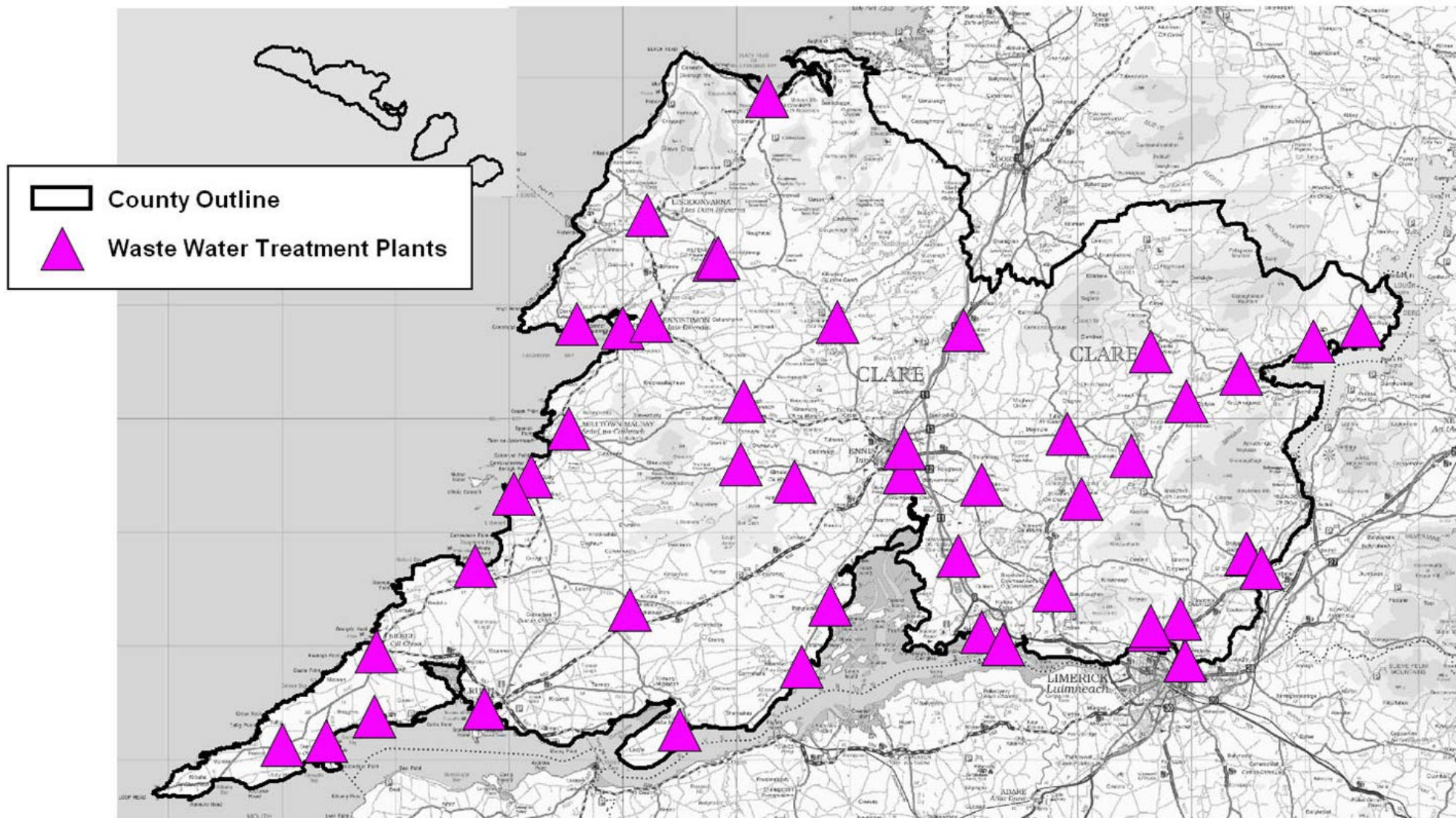
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.11.4 Waste Water Treatment Plants

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.12 Cultural Heritage

This section of the Environmental Report discusses cultural heritage which includes archaeological and architectural heritage.

5.12.1 Archaeological Heritage

Archaeological heritage is defined as including structures, places, caves, sites, features or other objects, whether on land underwater or in inter-tidal zones. All archaeological structures, constructions, groups of buildings, developed sites, all recorded monuments as well as their contexts, and moveable objects, situated both on land and underwater are part of the Archaeological Heritage. Therefore the archaeological heritage of the area is not confined to the archaeological sites within the Record of Monuments and Places. It also includes any archaeological sites that may not have been recorded yet, as well as archaeology beneath the ground surface, or underwater as well as the context of any such site discovered.

There are currently c.7500 monuments in Clare, which is more than most counties in Ireland. Notably, there is little evidence from the earliest period, the Mesolithic, but the Neolithic or New Stone Age and subsequent eras are well represented with many sites and artefacts demonstrating life in Clare for the past 6,000 years. These early farmers left little evidence of their settlements but their territorial/burial monuments survive. Large numbers of megalithic structures are found in the Burren including the Poulawack Cairn, a burial mound constructed more than 5500 years ago, which is of National importance. Nearby are Parknabinnia Chambered Tomb and a pre-historic quarry possibly used to extract stone to build these structures. North of this cluster stands what is possibly the most iconic monument in County Clare, the Poulmabrone Portal Tomb. Various megalithic tombs also survive in other areas of County.

The Bronze Age, 2500-500BC is represented by less dramatic visible structures, but no less important. They include wedge tombs, standing stones, stone circles and various types of burial mounds or barrows. By far the most common monuments in County Clare are ringfort enclosures existing in large numbers in rural areas (c. 3,000 examples). There are a number of different types: earthbank (rath or fairyfort), stone wall (caiseal) and combined earth and stone. Originally, it is thought they were farmsteads protecting people and livestock and some were reused more recently as cillíns or burial sites for strangers and unbaptised children. Common also from this early mediaeval period are Crannógs or small artificial islands in lakes. There are over 170 medieval stone churches in County Clare, as well as a number of larger ecclesiastical sites, such as Clare Augustinian Abbey, Corcomroe Cistercian Abbey and Ennis and Quin Franciscan Friaries. During the Medieval period, Norman castles were built at Bunratty (later demolished), Quin and Clarecastle, while over 230 Gaelic tower houses were built in the County during the 15th century.

The list of recorded monuments in Clare also includes field systems, log boats, souterrains, watermills, fulachta fiadh (ancient cooking places), holy wells, medieval roads, bridges, promontory forts, round towers and earthworks. This is a rich and varied record of past human activity, in the County.

Rivers have acted as focal points for both settlement and ritual activity through all periods of human settlement; this is borne out in County Clare by the number of recorded archaeological sites close to the River Fergus, for example Knockanoura Castle (CL033-087) and Skehanagh Castle (CL041-089). Under the National Monuments (Amendment) Act (2004) the archaeological heritage within County Clare is protected. The Record of Monuments and Places (RMP) for County Clare is an inventory of archaeological sites of significance and according to the CDP there are approximately 7,500 archaeological sites within County Clare.

Recent archaeological surveys of intertidal areas in the Shannon Estuary have uncovered a wealth of archaeological material including evidence of prehistoric settlement dating back to 7000BC. There are eight submerged forest locations, three of which represent relict woodland that has been inundated by rising water levels and which can date back far into prehistory. The inventory indicates references to 127 ship wrecking events between the sixteenth and the early twentieth century. However, only 16 wreck sites can be located precisely (SIFP SEA Environmental Report). The INFOMAR programme also maintains a Shipwreck Inventory (2002-2013), and from this inventory only one shipwreck location has been mapped in the surrounding waters for County Clare, that of the *SS Premier*.

5.12.2 Architectural Heritage

Part IV of the Planning and Development Act 2000 (as amended) defines the term “architectural heritage” as: structures and buildings together with their settings and attendant grounds, fixtures and fittings, groups of structures and buildings, and sites, which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest” and “where a structure is protected, the protection includes the structure, its interior and the land within its curtilage (including their interiors) and all fixtures and features which form part of the interior or exterior of all these structures”.

There are 857 protected structures in the Plan area ranging from churches, bridges, grain stores, houses, shops and public buildings (Refer to **Figure 5.12.1** “Protected Structures”). Many structures of industrial and railway heritage are also included in the Record. The town centre which has survived almost intact since the late 16th century and other groups of buildings in the plan area are designated Architectural Conservation Areas, affording protection to the exterior of all structures within the ACAs in order to protect the unique architectural character of an organically evolved, mediaeval, Gaelic market town.

An ACA refers to a place, area, group of structures or townscape, that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or that contributes to the appreciation of a protected structure, and whose character it is an objective of a Local Area Plan to preserve. Its inclusion within the Plan, in terms of Section 81, Part IV of the Planning and Development Act, 2000 (as amended) affords greater control over the form of development that may be permitted and reduces instances of inappropriate development, demolition and unnecessary change within the designated area.

There is also, in the Plan area, a rich heritage of stone buildings and examples of a rich vernacular building tradition which evolved, over many millennia, to suit life in this part of County Clare. While

many of these are not included in the Record of Protected Structures, they nevertheless contribute to the character of an area by their history, use of local, sustainable materials, classical proportions and inoffensive scale. It is important that such buildings are preserved into the future to maintain the attractive character of our rural landscape and contribute to the amenity and pleasure of residents and visitors alike.

5.12.3 Existing Environmental Problems

Although cultural heritage is afforded the highest level of legislative protection, eg. Record of Protected Structures and Architectural Conservation Areas, impacts may occur due to pressure from inappropriate developments. Significant development pressures may vary depending on the location within the Plan area.

5.12.4 What will happen to Cultural Heritage without the implementation of the Plan?

County Clare has a significant assembly of cultural heritage with extensive and effective legislation and guidance from International to national level affording both the architectural and archaeological heritage a high level of protection. However, in the absence of the Clare County Development Plan 2017-2023 there may not be a framework within which to regulate, aid and/or control development whether economic, social or environmental. This may lead to uncontrolled development resulting in losses and/or deterioration in the cultural heritage of the Plan area. The Record of Protected Structures would remain in place.

Under the above circumstances, the cultural heritage within the administrative/ settlement boundary, in the absence of the Plan would suffer due to insufficient monitoring and guidance. Thus, the evolution of cultural heritage in the absence of the Plan would be highly dependent on the rate and extent of uncontrolled developments. Ultimately, the potential for fragmentation, loss, and/or deterioration of cultural heritage would occur of this irreplaceable resource.

5.12.5 Data Information Gaps

It would be advantageous to undertake a detailed survey of the existing, historic and stone bridges in the Plan area to assess the historic, vernacular, design and amenity value for their protection.

5.12.6 Inter-relationships/compatibility

	PHH	SG	W	ACF	L	BFF	MAT	MAW	MAWS	MAWW	MARE
CH	√	√		√	√	√	√	x	x	x	

(BFF = Biodiversity, Flora and Fauna; PHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage;

5.12.7 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Cultural Heritage	Inclusion in the Plan
Include an objective in the plan which incorporates the importance of the specified ACAs within the Plan period.	Yes specific objective included at 15.5 plus detailed reference to all ACAs through the SEA assessment of settlements and associated zonings.

Numbers Of Protected Structures

Co. Clare Overall - 888

West Clare Municipal District - 408

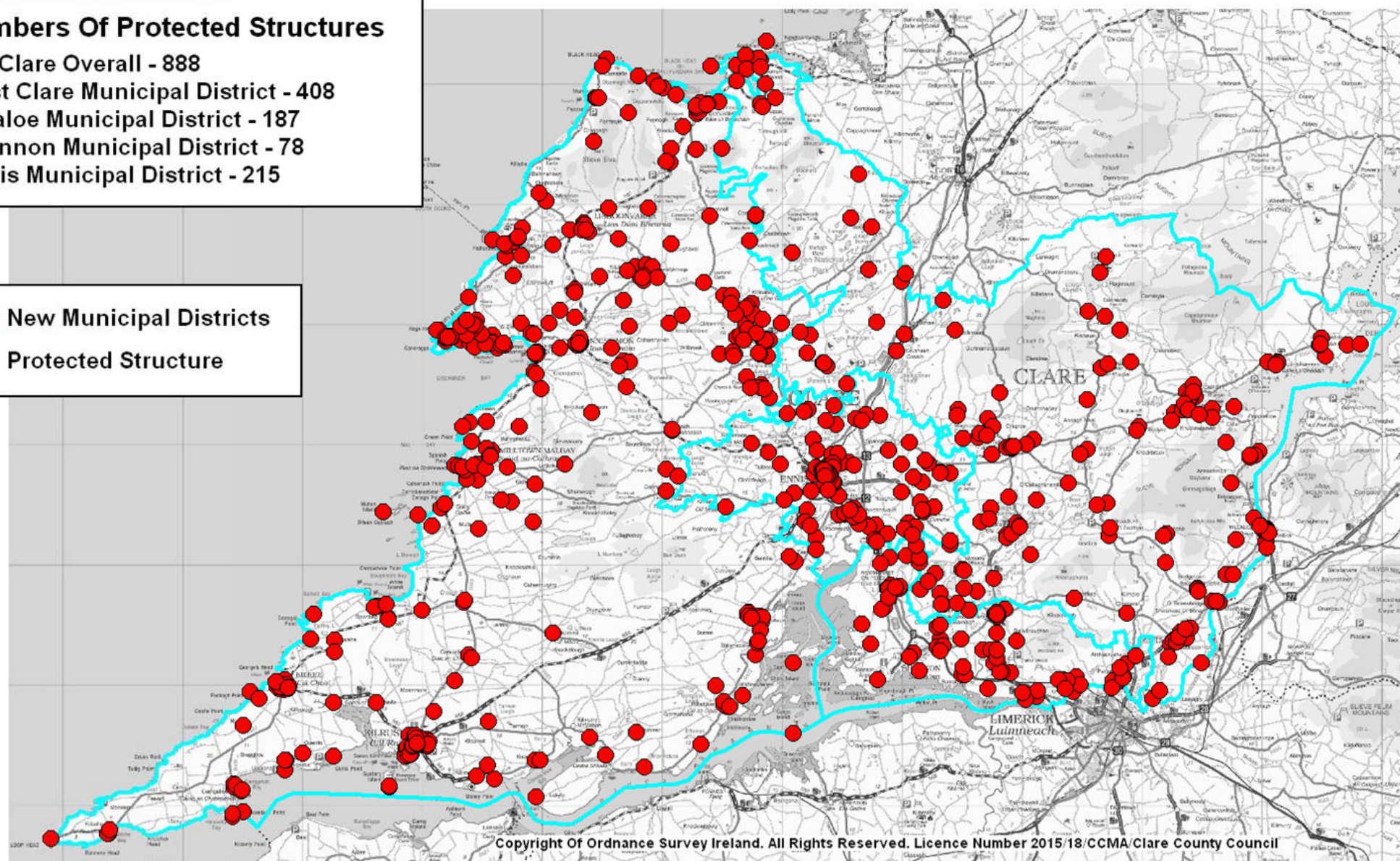
Killaloe Municipal District - 187

Shannon Municipal District - 78

Ennis Municipal District - 215

 New Municipal Districts

 Protected Structure



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.12.1 Architectural Heritage

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

Numbers Of Recorded Monuments

Co. Clare Overall - 7117

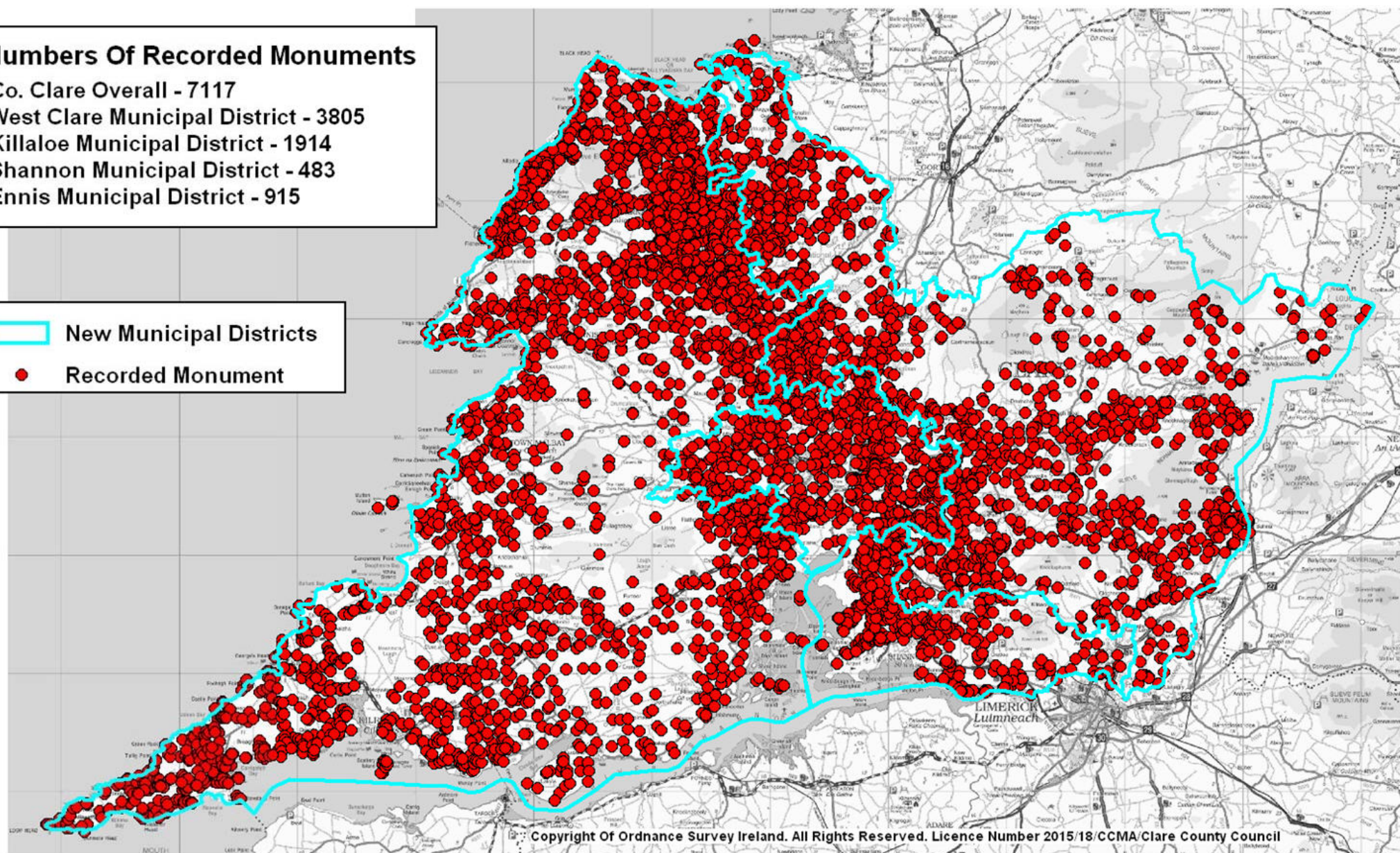
West Clare Municipal District - 3805

Killaloe Municipal District - 1914

Shannon Municipal District - 483

Ennis Municipal District - 915

-  New Municipal Districts
-  Recorded Monument



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.12.2 Recorded Monuments

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

5.13 Landscape

5.13.1 Introduction

Landscape is defined as an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (European Landscape Convention, 2002). This definition is incorporated through Part 2, Section 4(c) of the Planning and Development (Amendment) Act 2010. Within the Heritage Act 1995 landscape is defined as including “areas, sites, vistas and areas of significant scenic, archaeological, geological, historical, ecological or other scientific interest”.

Landscape consists of a series of layers including landform (geology and geomorphology), land cover (vegetation, water, human settlements) and human values (historical, cultural, religious) and other understandings and interactions with landform and land cover. The landscape plays an important role in people’s lives, providing individuals and communities with a sense of identity and belonging, as well as bestowing a sense of place. Landscape is the context within which change takes place.

5.13.2 Landscape Designations and Protection

There are two key studies that have been undertaken to characterise the diverse landscapes for the County and combined they provide a detailed set of landscape designations for the County which have been incorporated within the policies and objectives of the County Development Plan. The reports are:

The **CAAS Report (1997)** “Criteria for the Evaluation of Landscape Quality” which identified the visually sensitive features of the landscapes of the County and informed the 1999 Clare County Development Plan; and

The **Heritage Council Landscape Character Study/ERM (2003)** which provided a very detailed characterisation of the different parts of the County in line with the thinking of the DoEHLG (2000) Landscape and Landscape Assessment – Draft Planning Guidelines for Planning Authorities.

The National Landscape Strategy (NLS) for Ireland 2015-2025 seeks to provide a framework for the protection of the many cultural, social, economic and environmental values embedded in the landscape. The objective of the Strategy is to provide the data that will assist in the future decision making process regarding our landscapes, and which will ensure that decisions are made on the basis of factual evidence collected. The NLS will assist in the achievement of greater consistency in decision making across the country when dealing with issues of landscape, in particular via landscape character assessment. It will be used to ensure compliance with the European Landscape Convention and to establish principles for protecting and enhancing the landscape while positively managing its change. It will provide a high level policy framework to achieve balance between the protection, management and planning the landscape by way of supporting actions.

As part of the previous Clare County Development Plan 2011-2017 (as varied), Clare County Council in conjunction with CAAS Environmental Services revisited the policy approach, called “Clare’s Living Landscapes”. This approach builds on the “Landscape Character Assessment of County Clare”.

5.13.3 Landscape Characteristics of the Plan Area

The components of Landscape Character Assessment are Landscape Character Types, Landscape Character Areas and Seascape Character Areas.

a. Landscape Character Types

These are distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different localities throughout the County. Nonetheless, where they do occur, they commonly share similar combinations of geology, topography, land cover and historical land-use, for example, limestone river valleys and blanket bog uplands. There are 26 landscape types identified within the County, sub-divided into three groups, namely Upland Types, Lowland Types and Coastal Types. In addition the Landscape Character Assessment identified:

Habitat Types – an area in which an organism or group of organisms lives and is defined by the living and non-living components of the environment. The latter includes physical, chemical and geographical factors, in addition to human impact or management;

Historical Landscape Types – an archaeological or historic landscape is a discrete landscape based on the “scale and integrity of the archaeological features (that) reflect significantly on the human history and land use of that area”.

b. Landscape Character Areas

Landscape Character Areas (LCA) are units of the landscape that are geographically specific and have their own character and sense of place. Each Landscape Character Area’s distinctive character is based upon patterns of geology, landform, land-use, cultural, historical and ecological features. The Landscape Character Assessment for County Clare identified 21 Landscape Character Areas and are shown on **Figure 5.13.1** “Landscape Character Areas”.

c. Seascape Character Areas

A seascape can be defined as comprising one or more views from land to sea, views from sea to land, views along coastline, and/or the effect on landscape of the conjunction of sea and land. The LCA for County Clare area identified 12 Seascape Character Areas as shown in **Figure 5.13.2**. They include; Blackhead Bay, Burren, Cliffs of Moher, Liscannor Bay, Malbay, Mutton Island & White Strand, Ballard Bay & Donegal Point, North Loop Head Peninsula, South Loop Head & Shannon Mouth, Lower Shannon, River Shannon and the Fergus Estuary.

Within the Landscape Character Assessment a Seascape is defined as comprising of one or more of the following:

- views from land to sea;
- views from sea to land;
- views along coastline;
- the effect on landscape of the conjunction of sea and land.

5.13.4 Landscape Sensitivity

Within County Clare there are a number of valuable scenic routes which offer a very attractive cross sectional view and overall impression of differing landscapes. Scenic routes will be considered insofar as they can be visible from surrounding counties also. The scenic routes are located within and close to heritage landscape and include loughs, landscapes, ridges and islands. There are also walkways within the county which are of great significance and a number of trees within County Clare which are to be preserved, many of which are located on scenic routes as shown on **Figure 5.13.3**.

5.13.5 Living Landscapes

The Clare County Development Plan 2017-2023 identifies three types of living landscapes within which all parts of the county fall within one or more. It is in recognition of different parts of the County having different potential for how communities can pursue their ambitions and aspirations. Different areas have different strengths and weaknesses and as such what may be suitable for one area may not be suitable for another. The three types of living landscapes include Settled Landscapes, Working Landscapes and Heritage Landscapes. Please see **Figure 5.13.3** “Landscape Designations” which shows the landscapes within the Plan area as described below.

a. Settled Landscape

A settled landscape is where the majority of the population work and live and comprise of all landscapes not classified as Heritage or Working landscapes.

b. Working Landscape

Working landscapes are those areas within Settled Landscapes that contain pockets of concentrated development or a unique natural resource. The central part of the county including lies within the Western Corridor (Ennis to Limerick) Working Landscape. This corridor has the highest concentration of population and jobs and the strongest transport links and connectivity, which includes the County/Hub town of Ennis.

c. Heritage Landscape

Heritage Landscapes are those areas where sensitive environmental resources – scenic, ecological and historic, are located. The principal role of these landscapes is to sustain natural and cultural heritage. North Clare and the Burren together with parts of East Clare and the fringes of West Clare lies within a Heritage Landscape as shown on **Figure 5.13.3**.

5.13.6 Local Landscapes Features

Landscapes within urban areas provide a valuable contribution to an individual’s sense of well-being and quality of life. These could consist of a glimpse of countryside between buildings, a tree-lined river bank or street or a secluded pocket of woodland. All are worthy of preserving. An erosion of these small, but important landscapes, will cumulatively over time have a negative effect on the environment within which we live and impact on our well-being and also potentially on our broader environment including on biodiversity and climate change.

The plan area is rich in natural landscape features which reflect the character and local distinctiveness of both the urban and rural landscapes, including rivers, streams, ponds, lakes, turloughs, woodlands, hedgerows and field boundaries.

5.13.7 Issues and Threats in the Plan Area

The intrusion onto greenfield sites for development can have a significant effect on the landscape and local landscape features in rural and urban areas.

The character and landscape of seascapes can be compromised as a result of development. The visual impact of a development on the landscape should be considered from various visual aspects and in combination with any surrounding development. A failure to consider proposals in the context of potential cumulative effects on the landscape presents a serious threat to future landscapes. Areas along the Fergus and Shannon estuaries, along the west coast of County Clare and within the heritage landscape of the Burren and North Clare which experience development of one-off houses and other urban type development are having adverse visual impacts on the landscape due to its low capacity to absorb development. The cumulative effect of individual one-off houses has the potential to have a significant effect on the landscape.

5.13.8 What would happen to the landscape without implementation of the Plan?

In the absence of the Clare County Development Plan 2017-2023 there would be no framework within which to regulate, aid and/or manage future economic, social or environmental development. A lack of development objectives would lead to uncontrolled development with no framework for directing development to appropriate locations. Certain areas could experience particular development pressure, for example, along the Fergus estuary which has limited capacity for development before contributing to the degradation of the landscape. The Plan will include objectives that provide for the preservation, protection and enhancement of the landscape as part of an integrated sustainable planned approach to future development within the Plan area. Therefore the absence of the Plan would remove such protection and enhancement measures for the landscape, potentially leading to its fragmentation, loss and deterioration.

5.13.9 Current Issues and Problems/Data gaps/difficulties?

There is no up to date data on local landscape features within the plan area. A comprehensive survey would provide baseline information which would effectively inform where the focus of protection of these features should be directed.

Protection of views is challenging due to its subjective nature, but effort should be applied into undertaking a survey within the Plan area. In the absence of a record of views to be protected, consideration should be given to defining criteria which would assist in assessing any impacts in this regard when considering location of future development.

5.13.10 Inter-relationship/actions with other environmental parameters

The landscapes within which we live, and the threats to it, inter-relates with all facets of the environment, including human health and sense of well-being, biodiversity and water quality.

	PHH	SG	W	ACF	BFF	CH	MAT	MAW	MAWS	MAWW	MARE
L	√	√	√	√	√	√	√	√	√	√	√

(BFF = Biodiversity, Flora and Fauna; PYHH = Population and Human Health; SG = Soil and Geology; W = Water; Air and Climatic Factors; L = Landscape; MA=Material Assets – (MA)T = Transport; (MA)W = Waste; (MA)WS = Water Supply; (MA)WW = Waste Water; (MA)RE = Renewable Energy; CH =Cultural Heritage

5.13.11 SEA Recommendations *

*Refer to Chapter 11 for full details on recommendations

SEA Recommendations – Landscape	Inclusion in the Plan
To ensure local landscape features are recorded and protected, as they are the ones most likely to be lost incrementally in plan area.	This is achieved for urban areas through the inclusion of objective 3.13 under urban and rural settlement.
To record and protect important views within both the urban and rural areas of the Plan area.	This is achieved through the inclusion of objectives 13.3 and 13.7
To survey and protect trees and areas of woodland within the Plan area as important landscape features and to identify potential new areas for creating woodland areas.	Yes this is achieved through the inclusion of objective 14.15

5.13.12 Environmental Sensitivities of the Plan Area

The baseline information gathering has allowed an evaluation of the environmental sensitivities that exist within the Plan 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 which experience the highest concentration of environmental sensitivities and consequently the areas potentially most vulnerable to potential environmental impacts from development. This can be a useful guide when considering the strategic alternatives during the early stages in the plan making process, as to how and where the Development Plan should direct future growth.

The key datasets used to inform this sensitivity mapping were as follows;

- Landscape Character Areas
- Ecological Designations (SAC, SPAs, NHAs)
- Groundwater Vulnerability
- Source Protection Areas
- Flooding
- WFD River and Groundwater and TraC status
- Nature Reserves
- Wetland Habitats

The environmental sensitivities map (**Figure 5.13.4**) shows the level of overlap of environmental sensitivities and the range of physical environmental factors that require consideration in identifying locations for potential future growth. It is important to note that the environmental factors not reflected on this map, e.g. those that are point specific, like protected structures, were not included as it was considered by their inclusion; it would potentially give a visual mis-representation of sensitivity when considering potential areas for future growth. Also important to note is that the

physical extent of the environmental sensitivity can extend beyond the defined area on the map, as the potential impact can be generated at a location remote from the mapped area. For example, a development outside of a designated site boundary does not mean that it cannot impact on it. This is particularly relevant in relation to freshwater pearl mussel where developed outside of either a designated SAC catchment for freshwater pearl mussel or a pearl mussel sensitive area takes place on high risk soils such as peat the impacts can be realised for a significant distance downstream of the development and hence within the catchment of the pearl mussel.

In modelling, each variable was assigned a value for example Groundwater Vulnerability was assigned values as follows;

X (Subset of Extreme) = 5

E (Extreme) = 4

H (High) = 3

M (Moderate) = 2

L (Low) = 1

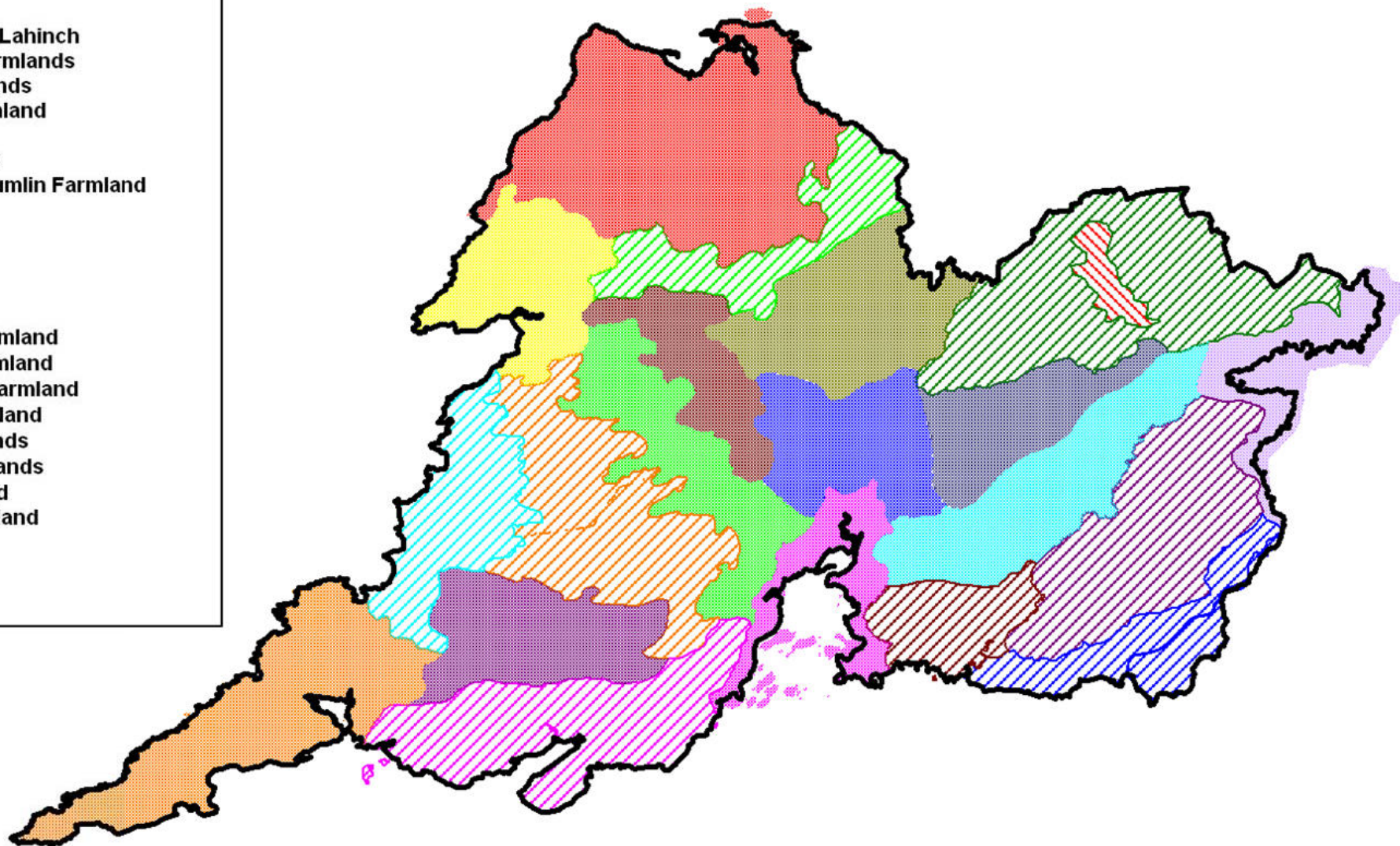
The map effectively reflects where the key concentrations of sensitivity are situated within the plan area. These include:

- The Northern area of the Plan (North Clare) – in and around the Burren which contains a number of NHAs, wetlands, rock at or near the surface and a heritage landscape.
- The Southern area of the Plan (along and including the Shannon Estuary)– This includes the Cloon River (FPM SAC), the Gaurus River and flood plain, River Fergus and flood plain (to the east), Ballybeg Lough, Newhall and Edenvale Estate (south-west) and the Shannon Estuary containing heritage landscapes and surface waters that are nutrient sensitive.
- The central area of the plan (including Ennis and on to North East Clare) – this includes key SPAs and NHAs which are protected for the Hen Harrier, moderate to poor river status, a high number of protected bat roosts, high to extreme groundwater vulnerability and areas of heritage landscape to the east.

Having set out the environmental baseline for the Plan area it highlighted the potential challenge for the plan makers in identifying the required amount of appropriate lands to meet future growth needs. This assisted and informed the development of alternatives as set out in the following **chapter 7**.

Landscape Character Areas

- Burren Uplands
- Cliffs of Moher and Lahinch
- Cullenagh River Farmlands
- East Clare Loughlands
- Ennis Drumlin Farmland
- Fergus Estuary
- Fergus Loughlands
- Kilmanona High Drumlin Farmland
- Kilrush Farmland
- Loop Head
- Lough Derg Basin
- Lough Graney
- Low Burren
- Malbay Coastal Farmland
- River Shannon Farmland
- Shannon Estuary Farmland
- Sixmilebridge Farmland
- Slieve Aughty Uplands
- Slieve Bernagh Uplands
- Slieve Callan Upland
- Tulla Drumlin Farmland



**Clare
County
Council**

Comhairle Contae an Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.13.1 Landscape Character Areas

SCALE: NOT TO SCALE

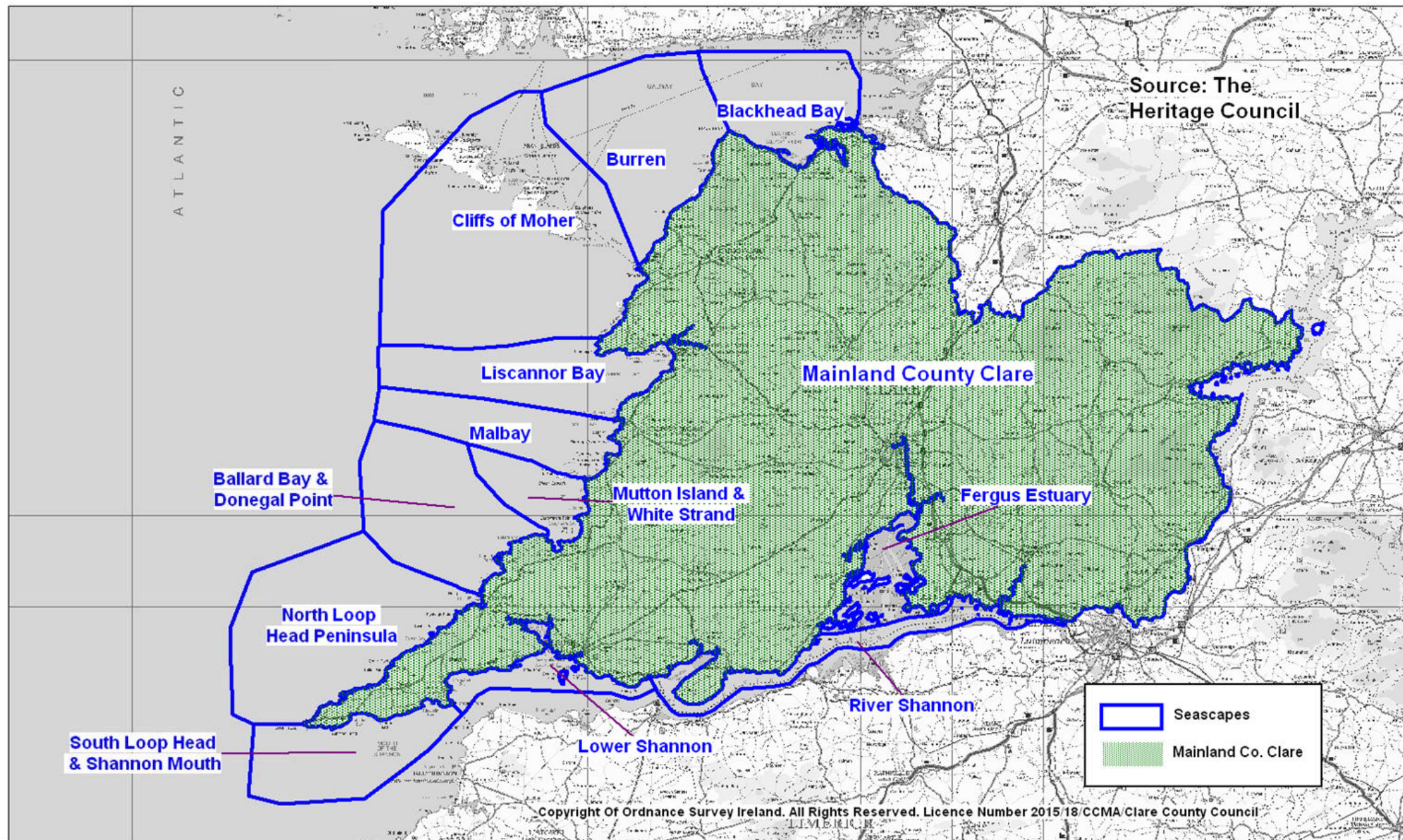
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 -2023

TITLE: Figure 5.13.2 Seascapes

SCALE: NOT TO SCALE

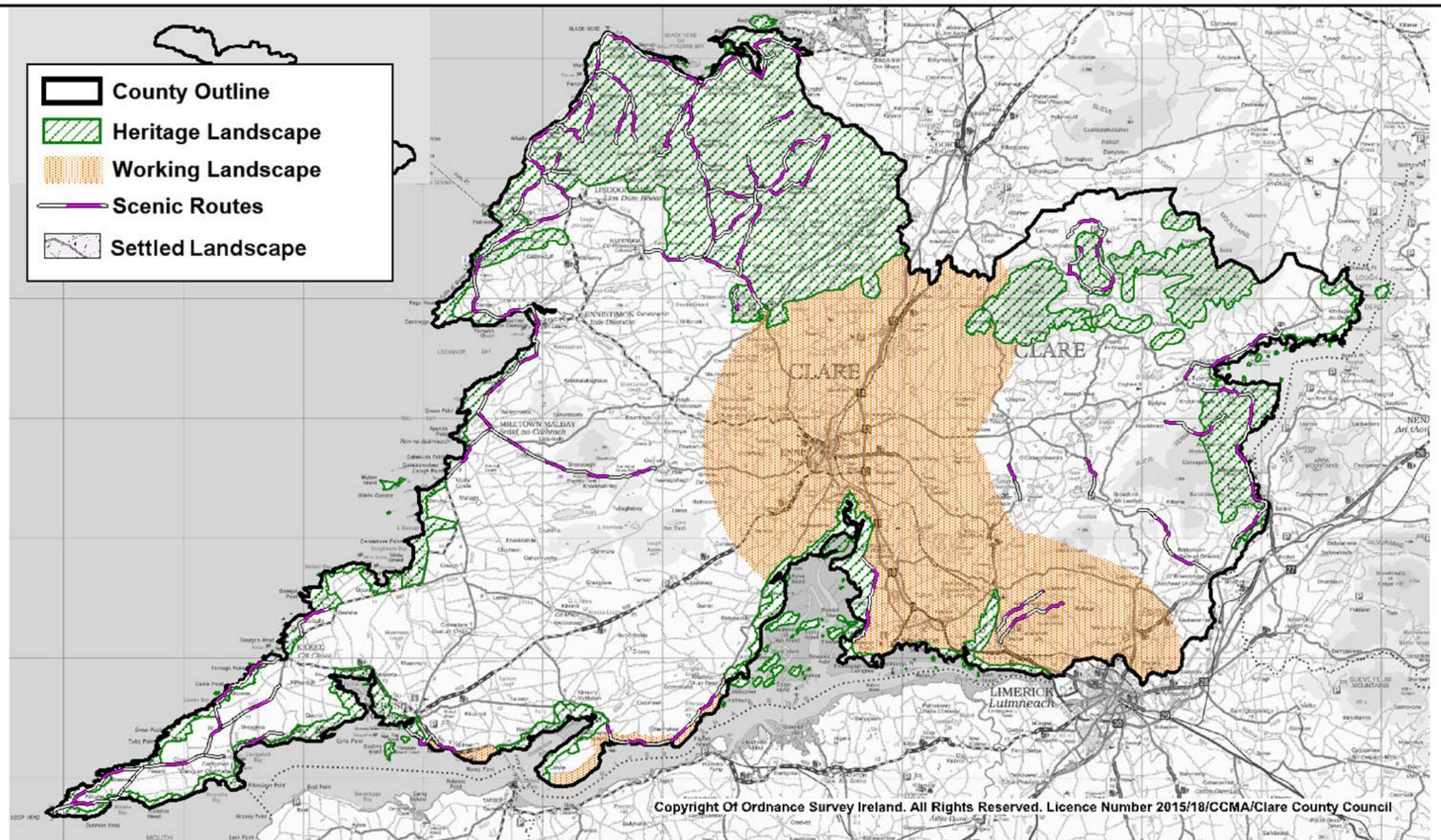
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



**Clare
County
Council**

Comhairle Contae An Chláir

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.13.3 Landscape Designations

SCALE: NOT TO SCALE

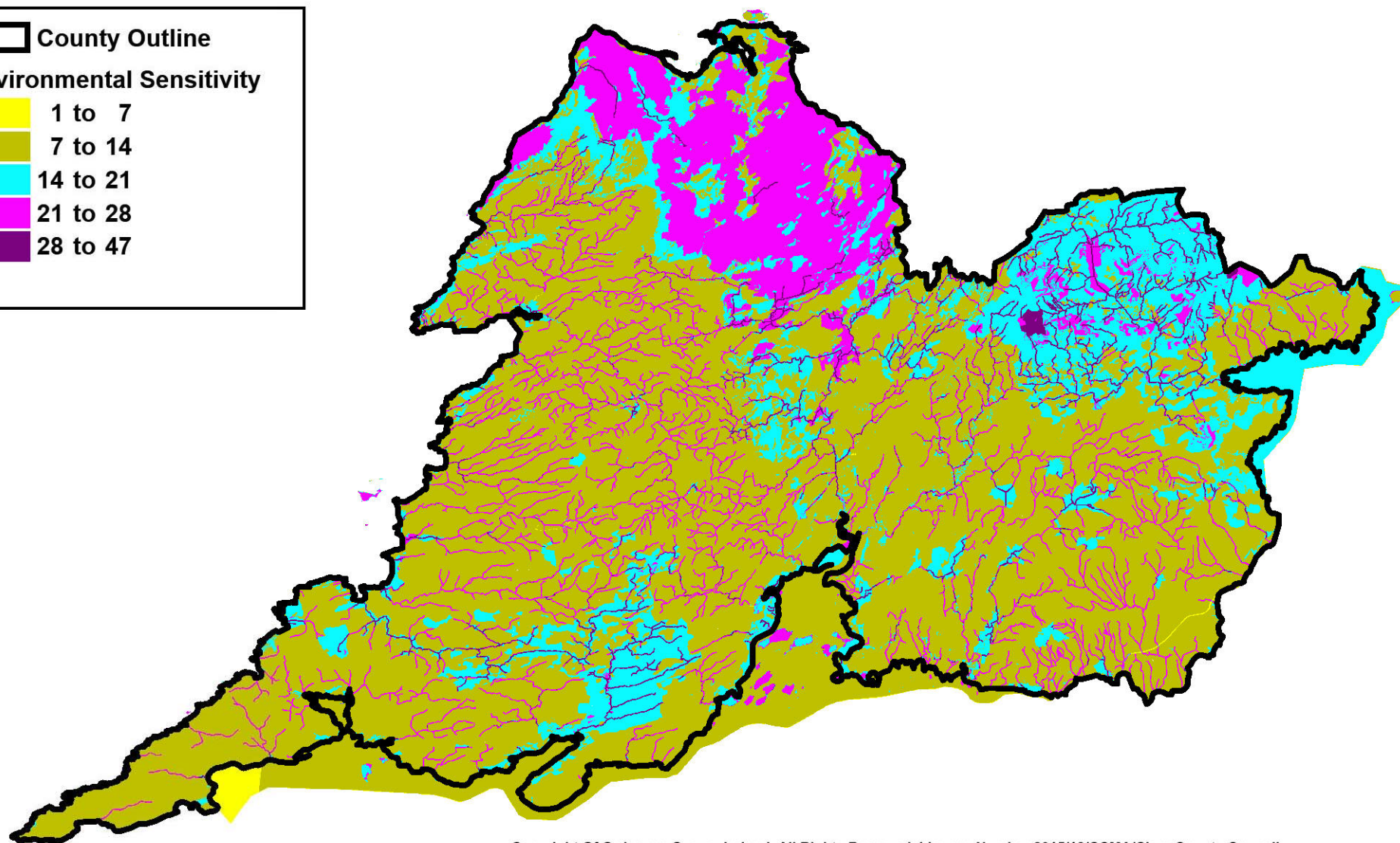
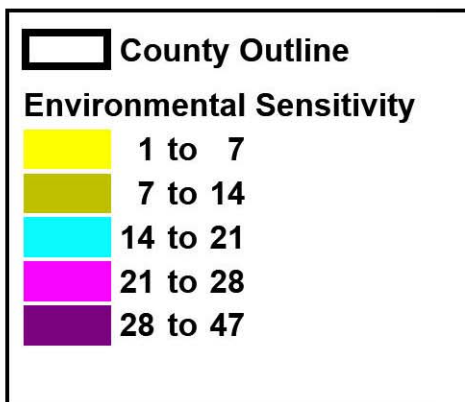
PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes



Copyright Of Ordnance Survey Ireland. All Rights Reserved. Licence Number 2015/18/CCMA/Clare County Council



**Clare
County
Council**

Comhairle Contae An Chláir

Tel. (065) 6821616 Fax (065) 6828233 Web: www.clarecoco.ie

Planning and Enterprise Development,
Áras Contae An Chláir,
New Road,
Ennis.

PROJECT: Clare County Development Plan 2017 - 2023

TITLE: Figure 5.13.4 Environmental Sensitivity

SCALE: NOT TO SCALE

PROJECT NO.

DRAWING NO.

DATE:
January 2017

DRAWN BY:
P. McMANUS

CHECKED:
S. Downes

Chapter Six - Environmental Assessment and Strategic Environmental Objectives

6.1 Introduction

Having established the environmental baseline under each of the environmental parameters in the preceding chapter, the key environmental issues have been identified. Taking account of these issues a series of Strategic Environmental Objectives have been compiled as a mechanism for ensuring environmental protection. The SEOs are applied as follows:

1. As measures against which the implementation of the Plan objectives and zoning objectives can be assessed for potential environmental impacts.
2. As measures for monitoring any actual environmental impacts as a consequence of implementing the Plan, by devising a series of targets and indicators for each of the SEOs.

6.2 Development of Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the implementation of the Clare County Development Plan 2017-2023 can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from the implementation of the Plan. The SEOs are set out under a range of topics and are used as standards against which the provisions of the 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 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 Plan area and are set out in **Table 6.1**. 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 Clare County Development Plan 2017-2023 area these 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 Plan. The SEOs are linked to a series of targets and indicators which can facilitate through monitoring the implementation of the Plan when adopted (see Chapter ten 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 County Development Plan area. The use of SEOs, although not a statutory requirement, does fulfil obligations set out in Schedule 2B of the Planning and

Development (Strategic Environmental Assessment) Regulations 2004, as amended. The SEOs formulated for this SEA for the Clare County Development Plan area set out in **Table 6.1**.

Table 6.1 Strategic Environmental Objectives

Parameter	Strategic Environmental Objective
Population (inc. Human Health and Quality of Life)	P1 – Protect, enhance and improve people’s quality of life based on high quality residential, community, educational, working and recreational environments and on sustainable travel patterns.
	P2 - To protect human health from hazards or nuisances arising from incompatible land uses/developments.
	P3 - Provision of green spaces for amenity and recreational uses.
Biodiversity, Flora and Fauna	B1 – Protect, conserve, enhance where possible and avoid loss of diversity and integrity of the broad range of habitats, species and wildlife corridors.
	B2 – To achieve the conservation objectives of European Sites (SACs and SPAs) and other sites of nature conservation.
	B3 - Conserve and protect other sites of nature conservation including NHAs, pNHAs, National Parks, Nature Reserves, Wildfowl Sanctuaries as well as protected species outside these areas as covered by the Wildlife Act.
	B4 - Meet the requirements of the Water Framework Directive and the Shannon River Basin Management Plan/National River Basin Management Plan
	B5 – To minimise and, where possible, eliminate threats to bio-diversity including invasive species.
	B6 - Promote green infrastructure networks, including riparian zones and wildlife corridors.
Soil & Geology	S1 – To maximise the sustainable re-use of the existing built environment, derelict, disused and infill sites (brownfield sites), rather than greenfield sites.
	S2 – Minimise the excavation and movement of soils within site works
	S3 – Minimise the consumption of non-renewable deposits on site.
	S4 - Minimise the amount of waste to landfill from site.
	S5 - Conserve, protect and avoid loss of diversity and integrity of designated habitats, geological features, species or their sustaining resources in designated ecological sites.
Water	W1 – Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystem (quality, level, flow).
	W2 – Maintain or improve the quality of surface water and groundwater (including estuarine) to status objectives as set out in the Water Framework Directive (WFD), the Shannon River Basin Management Plan and POMS.
	W3 – Implement appropriate sustainable drainage systems (SuDS) in the County.
	W4 – Reduce the impact of polluting substances to all waters and prevent pollution and contamination of ground water by adhering to aquifer protection plans and to maintain and improve the quality of drinking water supplies.
	W5 - Promote sustainable water use and water conservation in the plan area and to maintain and improve the quality of drinking water supplies.
	W6 –Protect flood plains and areas of flood risk from development through avoidance, mitigation and adaptation measures.
	W7 – To promote a responsible attitude to recreation and amenity use of water in relation to water quality and disturbance to species and to prevent pollution and contamination of designated bathing waters.
Air/Noise/Climate	C1 – Minimise all forms of air pollution and maintain/improve ambient air quality.
	C2– Minimise emissions of greenhouse gases and contribute to a reduction and avoidance of human-induced global climate change.
	C3 - Reduce car dependency within the plan area by way of an integrated approach to

	sustainable urban transport (SUMP).
Material Assets	
Transport	<p>T1 – Maximise sustainable modes of transport and encourage use of walkways/cycle paths as alternative routes to school, work, and shops.</p> <p>T2 - Provide for ease of movement for all road users and to promote development patterns that protect and enhance road safety.</p>
Waste	WA1 – Implement the waste pyramid and encourage reuse/recycling of material wherever possible.
Water Supply	<p>WS1 - To ensure adequate and clean drinking water supplies.</p> <p>WS2 - Improve efficiency in distribution of potable water to the population through pipe rehabilitation and to promote water conservation and sustainable water usage for long-term protection of available water resources.</p>
Waste Water	<p>WW1 - To ensure that all zoned lands (existing and proposed) are connected to the public sewer network ensuring treatment of wastewater which meet EU requirements prior to discharge.</p> <p>WW2 - Reduce the dependency on individual proprietary wastewater treatment facilities and ensure the highest standards possible in existing and future wastewater treatment facilities.</p>
Renewable Energy	RE1 - Reduce waste of energy, promote use of renewable energy sources and support energy conservation initiatives across all sectors including the development of low carbon business practices and buildings.
Cultural Heritage	<p>CH1 – Protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded and unrecorded monuments), architectural (Protected Structures, Architectural Conservation Areas, vernacular buildings, materials and urban fabric) and manmade landscape features (e.g. field walls, footpaths, gate piers etc.).</p> <p>CH2 – To protect, conserve and enhance local folklore, traditions and placenames within the Plan area.</p> <p>CH3 – To ensure the restoration and re-use of existing uninhabited and derelict structures where possible opposed to demolition and new build (to promote sustainability and reduce landfill).</p>
Landscape	<p>Ensure no significant disruption of historic/cultural landscapes and features through objectives of the County Development Plan.</p> <p>No significant visual impact from development.</p> <p>Ensure no significant disruption of high landscape values.</p>

6.3 Application of Strategic Environmental Objectives

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

Chapter Seven - Development and Consideration of Alternatives

7.1 Introduction

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 within the Environmental Report:

- **Reasonable** alternatives taking into account the objectives and the geographical scope of the plan or programme;
- The alternatives are **identified, described** and **evaluated**;
- An outline of the **reasons** for selecting the alternatives dealt with;
- 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).

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” (13I(c) of the SEA Regulations).

In the preparation, consideration and assessment of alternatives regard has been had throughout the process, to the draft “Developing and Assessing Alternatives in Strategic Environmental Assessment” – Good Practice Guidance February 2014⁸.

Arising from good practice guidance, consideration of alternatives is identified as one of the first key steps to be undertaken in the plan preparation and SEA processes, with the initial alternatives identified and presented within the Scoping Report (Clare CDP Scoping Report, February 2015). This allowed for timely consultation with key stakeholders and environmental authorities in this regard. Clare County Council endeavoured throughout the plan making process to undertake the early consideration of alternatives. This allowed for key planning decisions to be fully informed in relation to environmental data and issues relevant to the Plan area. It was recognised that alternatives would be refined, possibly eliminated and/or added to over the duration of the plan making process. Where such decisions did arise the process and reasoning is documented and a comprehensive description of the identification, consideration and selection of alternatives, including the preferred one, is presented within this chapter of the Environmental Report.

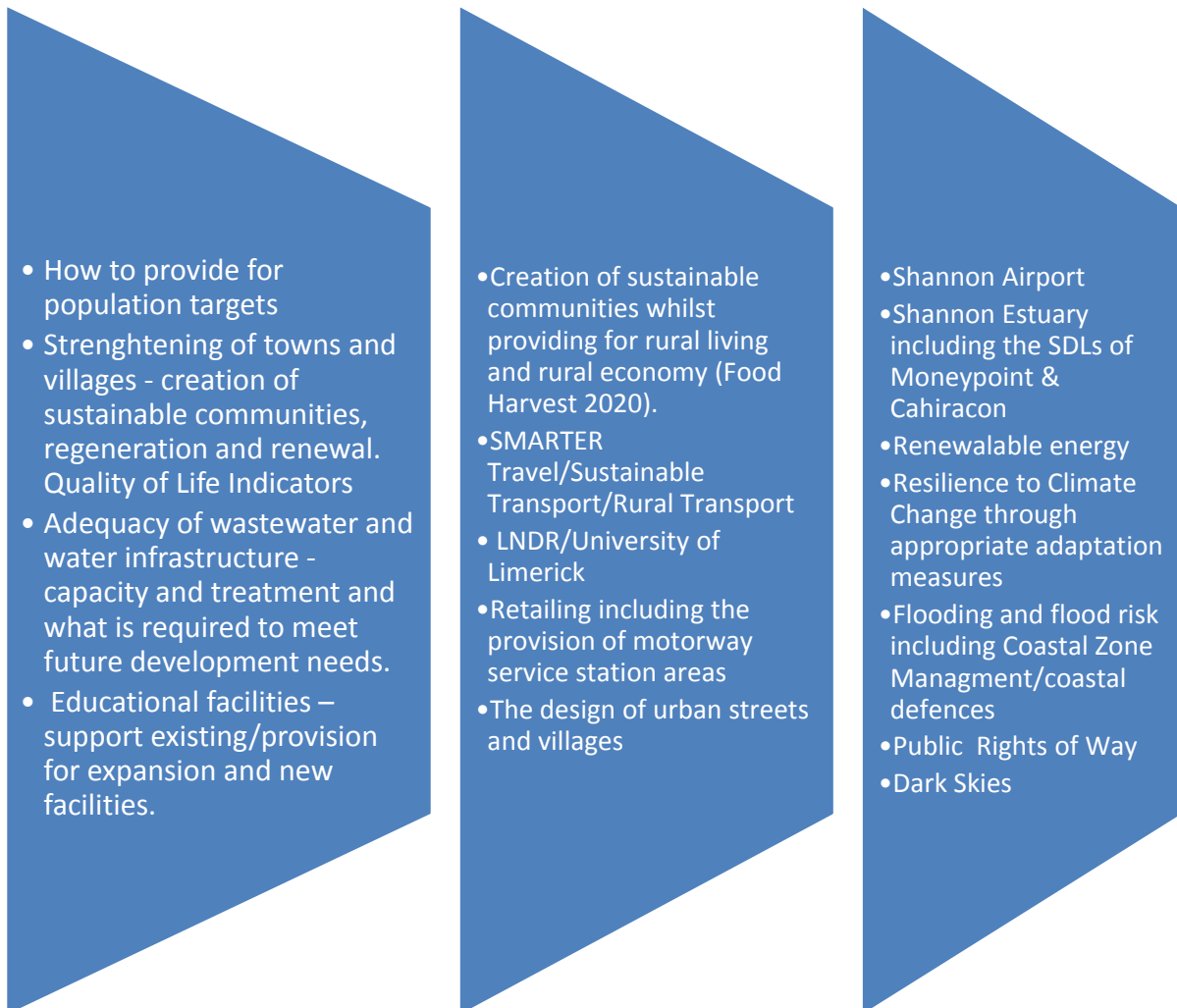
7.2 Generation and Identification of Alternatives

In generating alternative scenarios, it is considered necessary to identify key components of the Development Plan within the context of considering alternative scenarios. By considering the strategic alternatives for specific plan components it will ensure a comprehensive and integrated approach to identifying a preferred/chosen alternative.

⁸ EPA

The approach adopted in the consideration of alternatives for the Development Plan was to identify and describe different scenarios for key components of the Development Plan. This was undertaken within the context of any higher level strategic actions as well as the geographical scope of the Development Plan area. Environmental sensitivity mapping was used to provide a useful guide in considering the strategic alternatives. Alternatives were derived based on a combination of planning and environmental factors for each component.

Some of the key strategic issues identified which were considered in the formulation of the different alternatives and the different approaches included the following:



In developing alternatives the ‘do nothing’ approach is not considered a realistic option due to the statutory requirement to review the County Development Plan, taking account of key national and regional guidelines and strategies. The “do nothing” scenario will therefore act as our baseline for the County Development Plan review.

Developing combinations incorporating the key elements of the Development Plan, i.e. the plan framework, plan structure and settlement strategy to include zoning provide the foundation for the formulation of alternatives.

- The **plan framework** is set in so far as the administrative area for the County Development Plan covers the geographical area of the County. The internal division of administrative areas within the County has however changed since the re-organisation of local government involving the abolition of Ennis Town Council and Kilrush Town Council and the introduction of municipal areas. The new municipal districts differ to the electoral areas for which the Local Area Plans for the County were prepared under the current Development Plan 2011 - 2017.
- Defining the **plan structure** in terms of developing the core strategy and identifying the settlement hierarchy for the county;
- Defining the **settlement strategy** in relation to all the settlements within the Plan area. The central theme will be to promote sustainable communities throughout the County. Alternatives will be developed taking into account all the components of the Development Plan which are necessary to facilitate development over the lifetime of the plan. These components are fundamental to developing a cohesive settlement strategy. Different options will be considered for each to feed into developing the overall strategic alternatives for the Development Plan. The main components include housing, employment and economic development, community and educational facilities, water and wastewater infrastructure; transport and access; energy provision; retail provision; environmental protection and management of natural resources; climate change and adaptation.

7.3 On-going Evolution of Alternatives

A key challenge in the plan preparation process was identifying adequate appropriate land to meet the future needs of the plan area given the level of environmental sensitivities which exist. Establishing a balance between environmental protection, integration and meeting future population needs involved an on-going iterative process between the plan-makers and the SEA, AA and Flood Risk Assessment teams. The presence of both plan making and SEA team members at all CDP meetings was key to the accomplishment of this balance which led to the continued evolution of the alternatives throughout the plan making process. Alternatives have therefore evolved and in some cases have been ‘tweaked’ in the detail as the process has progressed.

7.4 Assessment of Alternatives

Having identified the Strategic Environmental Objectives against which the consideration of alternatives, policies and objectives of the Development Plan will be assessed for their potential environmental impacts, the compatibility criteria to be used in the assessments are as follows;

+	Reflects a potential positive effect	-	Reflects a potential negative effect
0	Reflects a neutral or uncertain effect	+/-	Reflects that positive and negative effects are likely or that in the absence of further detail the effects is unclear

In accordance with SEA guidelines, ‘**impact**’ is defined in terms of the quality (positive, negative or neutral), ‘**significance**’ i.e. in terms of the scale/type of development envisaged by the plan and the

‘sensitivity’ and/or importance of the receiving environment, and duration (short, medium, long term, permanent or temporary). It should be noted that from the onset throughout the development of both the draft and final plan, team members ensured both environmental and planning considerations were taken into account as alternatives to the plan and where possible these considerations have been documented in the alternatives tables here under.

Alternative Considered	0	+	-	+/-
<p>Option 1: Amend settlement hierarchy and review growth in fewer areas in line with infrastructural provisions and outside of high risk areas e.g. flooding, protected areas, areas susceptible to issues arising from climate change.</p> <p>This alternative is to amend the number of settlements within the plan area, reducing the number of smaller settlements, and targeting growth in a fewer number of locations where appropriate infrastructure is already in place. This would see a smaller number of existing settlements prioritised for development. Designated areas (European Sites, Groundwater Protection Zones etc.) would be subject to appropriate environmental protection measures in line with the regulatory framework. Rural development policies would support agriculture, forestry, renewable energy and tourism</p>			<p>P1</p> <p>T1</p> <p>T2</p> <p>S1</p> <p>CH1</p> <p>CH2</p> <p>L1 – L2</p>	<p>B1 – B7</p> <p>W1 –</p> <p>W3</p> <p>P2 &</p> <p>P3</p> <p>S2 & S3</p>
<p>Principal environmental impacts identified for this scenario/evolution of alternative through Plan & SEA team meetings:</p> <ul style="list-style-type: none"> • In general, there is sufficient water supply treatment capacity in the county to meet the needs of the target population identified in the core strategy. • Many of the water treatment plants supply water to a number of settlements in a “Water Supply Zone”(WSZ) and WSZs may be linked together to form a water resource zone. It is Irish Water’s objective to interlink WSZs, where appropriate, to increase the resilience (reliability) of the water supply system. Network reinforcement is likely to be required to ensure that water supply can be moved around the network to where it is needed. In addition, many of the water treatment plants in the county need to be upgraded in order to ensure that water is produced to the required standards as set out in the relevant Drinking Water Regulations. • It is estimated that 46% of the water supplied in County Clare is lost as a result of leakage as well as illegal use of water. Clean potable water is an important resource and therefore water conservation is essential to ensure security of supply in the future. • Through the implementation of this scenario the focus would see higher densities in the larger areas however, many of these areas are already under significant pressure in terms of water supply. • There are 28 smaller urban areas, in the size range 500 P.E. up to the Directive thresholds, with no treatment or preliminary treatment only in 2013. 				

- In addition Shannon Town was included as an agglomeration identified in the European Commission infringement case against Ireland in respect of the Urban Waste Water Treatment Directive
- Outside of the larger towns and villages most developments in County Clare are treated by individual proprietary wastewater treatment plants and septic tanks.
- Significant upgrades would be required to meet this scenario with the absorption capacity of rivers a key consideration in the longer terms as the county would see an indefinite upgrading of waste water treatment plants to meet requirements. This is unsustainable.
- Many of the larger towns and villages in County Clare suffer traffic congestion either intermittently at present during the summer season or right throughout the year such as Ennistymon where a significant bottleneck exists. To address this and other bottleneck issues would require investment in junctions, traffic calming measures, the securing of link roads, ring roads or by-passes as generally the towns and villages in County Clare are limited in the width of the physical streetscape and so addressing this issue would require significant investment and land take leading to impacts on biodiversity, flora and fauna, soil and landscape amongst others.
- This scenario would represent a large shift in policy with rural areas reverting to “open space” with no specific policy instead of settlements, challenges would arise in relation to ribbon development and risk of significant increase in same.
- Consequently, people would have to drive longer distances for future services/provisions.
- This scenario would see higher densities in the larger towns and villages (Ennis, Shannon together with the Service Towns (Kilrush, Ennistymon/Lahinch and Scarriff/Tuamgraney). It would also see the promotion of brownfield development above Greenfield development.
- Smaller towns such as Killaloe, Sixmilebridge, Tulla, Newmarket-on-Fergus, Miltown Malbay, Lisdoonvarna and Kilkee would most likely decline over time with fewer services provided, and this scenario would benefit certain areas above others.
- An indirect impact from this scenario would be greater decline and loss of services in smaller settlements (Large villages, small villages and clusters) with accompanying social impacts. There could also be an accompanying increase in dispersed rural housing and associated groundwater, transport and landscape impacts.
- Should development be concentrated in a smaller numbers of settlements, the declining activity, investment and maintenance of other settlements could see rising dereliction and land abandonment – this would impact on population, cultural heritage and soil SEOs and could impact on biodiversity SEOs due to lack of land management in certain areas especially grassland areas or areas of the burren where scrub encroachment is already a significant issue. Alien and invasive species spread could also become escalated if left unchecked in smaller settlements or rural areas.

Alternative Considered	0	+	-	+/-
------------------------	---	---	---	-----

<p>Option Two: Dispersed Settlement led approach (Unrestricted settlement)</p> <p>This scenario envisages growth of all settlements within the County with heavy emphasis on accommodating housing within all settlements. Other than Ennis and other large towns (such as Shannon and Kilrush) there would be no hierarchy and growth would be envisaged in all settlements). Designated areas (European Sites, Groundwater Protection zones etc.) would be subject to appropriate environmental protection measures in line with the regulatory framework. As per Option 1, rural development policies would support agriculture, forestry, renewable energy and tourism.</p> <p>This option is in effect an unrestricted option.</p>		T2	P1 B1 B6 S2 S5 T1 CH1,CH2 CH3 L1 & L2	
--	--	----	---	--

Principal environmental impacts identified for this scenario/evolution of alternative through Plan & SEA team meetings:

- This scenario would require significant road infrastructural improvements for Miltown Malbay, Killaloe and many of the large and small villages such as Fanore, Doonbeg and Tubber.
- More generally, due to dispersed pattern and lack of hierarchy, whole infrastructure would require improvement under this scenario.
- This scenario could lead to stagnation of rural settlements as lack of housing provision and policy could result in developments in countryside and not existing settlements.
- Significant increase in rural housing with lack of policy would result in increased private wastewater treatment, potential groundwater impacts and increase in private car trips with resulting issues on road safety.
- Indirect cumulative impacts on biodiversity especially loss of ecological corridors, stepping stones and features of local biodiversity importance together with fragmentation of non designated habitats under this scenario.
- This scenario could work against the rural economy and result in adverse impacts on rural settlements and areas; there would be less recognition of the strengths and characteristics of rural settlements, in turn, there could be a range of landscape and heritage impacts, and
- In the absence of a county level settlement hierarchy, criteria based approach to development of infrastructural requirements would be required which may not be formed through a multi-disciplinary approach.

Alternative Considered	0	+	-	+/-
------------------------	---	---	---	-----

Option	Three: Strategic Planning	P1-P3 S1-S5 W1 – W7 T1 – T2 WA1, WS1, WS2 WW1, WW2 RE1 B2-B6	B1	C1 – C3 CH1 – CH3 L1, L2
Approach/Balanced Approach	This scenario is a planned sustainable development approach to planning in the County. Development will be focused within zoned and serviced areas. This scenario plans for the strengthening of rural villages and residential development into designated settlements. Appropriate environmental protection measures will be implemented for designated areas. In this scenario particular rural development activities would be more strategic and certain areas identified to support tourism and renewable energy.			

Principal environmental impacts identified for this scenario/evolution of alternative through Plan & SEA team meetings:

- This scenario would see the current settlement hierarchy retained subject to serviced provision of lands;
- Similar wastewater issues remain in this scenario – i.e. many smaller settlements have insufficient treatment and/or capacity to accommodate future growth.
- Ennis retains its “hub” status and Shannon its “gateway” status under the National Spatial Strategy, Ennis retains its function of a County town and can build on the infrastructural investment in and around the town in recent years e.g. M18 By-pass, current wastewater treatment plant upgrades at Clonroadmore, together with the current water mains rehabilitation being undertaken by Clare County Council and Irish Water.
- Smarter travel policies and those relating cycle lanes and improvements in pedestrian facilities fit better with this scenario.
- Rural housing trend likely to continue with this scenario but within a policy framework and hierarchy. Since the last plan (2011 – 2017) there has been a considerable loss in particular the 20-35 age bracket with emigration hitting rural areas the worst however, this is changing in the last 2 years with the numbers returning to Ireland on the increase again.
- This scenario directs development to town centres.
- This approach allows for better protection of designated sites and achievement of WFD targets as serviced led development is directed to settlements.
- Reuse of brownfield and infill sites promoted in this scenario.
- Uneven population growth in Clare but with adoption of core strategy that is evidence based. The CDP will be able to assess the success of addressing this issue over the lifetime of the plan.
- Commuting patterns will generally remain the same with the key focus towards the hub and gateway together with the large towns.

- The inclusion of Green Infrastructure, a stronger emphasis on carbon reduction and Green House Gas emissions through this option reflects a significant positive on the SEOs.

When discussing this scenario it was felt that tourism policies focused on certain areas (coupled with the additional pressures which the Wild Atlantic Way would put on the county) may not result in positive impacts as there may be greater disturbance issues on habitats and species particularly around West and North Clare (the Burren and the coastal areas in particular) where there are a higher number of designated sites. Therefore, it is proposed that instead of targeted identified tourism areas, this scenario be altered to ensure tourism policies are open and flexible enough to accommodate tourism activities within appropriate locations. This excludes reference to existing tourism hot spots such as specific tourism policies for Bunratty, Shannon and Lough Derg which include protective and precautionary measures.

Alternative Considered	0	+	-	+/-
Option Four: Employment led growth This scenario looks at employment-led growth which focuses development in key locations where employment growth is more likely to be delivered and differed from previous Plan	P3 S2 – S5 W1, W2, W3 – W7 WA1	P1 RE1	P2 B1 B2 B3 B4	B5 CH1 CH2 CH3 L1

strategies which spread growth based on the size and scale of the settlement in accordance with the core strategy. The scenario focused on key variations to the 2011-2017 CDP which included the focus of economic development in the Shannon Estuary and its hinterland identified through the SIFP and the identification of a key infrastructural safeguard in the Limerick Northern Distributor Route which seeks to open up access to UL and the National Technology Park in Limerick for employment and education. In addition the identification of potential sources of employment outside the settlement boundary for example at junction 12 in Ennis which was identified as a key employment opportunity.	WS1 WS2 WW1 WW2		B5 S1 C1 – C3 T1 & T2	L2
---	--------------------------	--	--------------------------------	----

Principal environmental impacts identified for this scenario/evolution of alternative through Plan & SEA team meetings:

- This scenario would focus on areas where employment opportunities arise irrespective of the capacity of the physical infrastructure.
- As with scenario one depending on where these employment opportunities arise water treatment in particular would be a key concern. Should the employment opportunity arise outside of a settlement where no water treatment plant exists it is unlikely to be prioritised by Irish Water in this plan cycle for the incorporation of a new plant.
- Through the implementation of this scenario the focus would see higher densities in the larger areas however; many of these areas are already under significant pressure in terms of water supply.
- As much of the employment led opportunity focuses on the key urban areas such as the hub town of Ennis and the gateway of Shannon this scenario would see further increased pressures on these towns in terms of transport and in particular traffic congestion at peak hours but also throughout the day.
- Many of the larger towns and villages in County Clare suffer traffic congestion either intermittently or in the case of Ennis town centre on ongoing bases. To address this and other bottleneck issues would require investment in junctions, traffic calming measures, the securing of link roads, ring roads or by-passes as generally the towns and villages in County Clare are limited in the width of the physical streetscape and so addressing this issue would require significant investment and land take leading to impacts on biodiversity, flora and fauna, soil and landscape amongst others.
- This scenario would represent a large shift in policy with rural areas reverting to “open space” with no specific policy instead of settlements, challenges would arise in relation to ribbon development and risk of significant increase in same.
- Consequently, people would have to drive longer distances for future services/provisions.
- This scenario would see higher densities in the larger towns and villages (Ennis, Shannon

together with the Service Towns (Kilrush, Ennistymon/Lahinch and Scarriff/Tuamgraney). It would also see the promotion of brownfield development above Greenfield development.

- Smaller towns such as Killaloe, Sixmilebridge, Tulla, Newmarket-on-Fergus, Miltown Malbay, Lisdoonvarna and Kilkee would most likely decline over time with fewer services provided, and this scenario would benefit certain areas above others.
- This scenario may also focus on areas with little or no services which will reflect negatively on many of the SEOs.

Alternative Considered	0	+	-	+/-
Option 5: Strategic Planning for Sustainable Growth		P1-P3, S1-S5 W1 – W7 T1 – T2	B1	C1 – C3 CH1 – CH3
This scenario involves strategic planning taking into account all new and improved policies. Planning authorities and those interacting with the planning process have, in the past few years, had to address a wide range of new policy and legislative requirements. These guidelines, up-		WA1, WS1, WS2 WW1, WW2 RE1 B2-B6		L1, L2

dates to Directives and subsequent regulations are designed at ensuring all growth and development is carried out in a sustainable fashion.

Principal environmental impacts identified for this scenario/evolution of alternative through Plan & SEA team meetings:

- This scenario would see the current settlement hierarchy retained subject to serviced provision of lands.
- The Planning Policy Statement 2015 requires that planning supports the protection and enhancement of environmental quality by guiding development towards optimal locations from the perspective of ensuring high standards of water and air quality, biodiversity and the minimisation of pollution risk.
- 2010 Planning legislation improved how water management and the planning system are integrated by requiring development plans to support protection and enhancement of water quality, particularly with regard to securing the objectives of the Water Framework Directive River Basin Management Plans.
- The legislation also required that the location of development should be linked to existing wastewater treatment capacity and planned investment in capacity in the future.
- Planning which is supported by evidence;

The Planning System and Flood Risk Management – Guidelines for Planning Authorities which were published in 2009 but since then we have CFRAMS and the publication of the associated flood risk maps which will determine the best location for development.

In relation to the Birds and Habitats Regulations 2011 Clare County Council have undertaken an assessment of impact of proposals on protected habitats and species and taken the outcome of this assessment into account within the development of growth within settlements and identification of appropriate zoning. This will ensure a sustainable development approach to planning in the County during the lifetime of the plan.

- Development will be focused within zoned and serviced areas. This scenario plans for the strengthening of rural villages and residential development into designated settlements.
- This scenario promotes the reuse of brownfield and infill sites and moves away from greenfield sites.
- Appropriate environmental protection measures will be implemented for designated areas. In this scenario particular rural development activities would be more strategic and certain areas identified to support tourism and renewable energy.
- This scenario directs development to the key town centres of Ennis, Shannon, Kilrush, Ennistymon and in general the larger towns and villages.
- The use of GIS as a tool to better assess the potential environmental effects was highlighted at the onset of the SEA and AA process. As a result each settlement and proposed zoning was assigned a unique identifier within the associated GIS layers in order

to make the best use in GIS to undertake assessments on a polygon by polygon or unique unit basis. This provided for a more robust and thorough assessment of the settlements and associated zonings both from an SEA and AA point of view and also from a Flood Risk perspective. It also reflects the current practice and potential of the application of Geographic Information Systems as a support tool in Strategic Environmental Assessment of Land Use Plans as identified in the EPA GIS SEA Manual.

- The retention of the Limerick/Shannon areas as a key Gateway along the west coast of Ireland, supported by Ennis as an important ‘hub’ town as identified and supported in the National Spatial Strategy (NSS). In addition to this the inclusion of the Strategic Integrated Framework Plan for the Shannon Estuary encourages harnessing the potential of the estuary within the context of its significant natural and cultural heritage assets. The potential for trialling and testing renewable energy devices in the estuary will support the transition to a low carbon future and adapt to a changing climate particular the development of alternative indigenous energy resources.
- The inclusion of specific objectives for green infrastructure and a stronger emphasis on Carbon Reduction and Green House Gas Emissions in line with EU White Paper, National Adaptation Strategy and the Kyoto Protocol.

Other Sub Options and prioritised development strategies

During the course of development of the County Development Plan and through round table discussions between both the Planning and Environmental Assessment teams, discussions took place in relation to the identification of a series of Opportunity Sites within towns and villages across the county. A strategic approach to the best use of these sites as a means to facilitate redevelopment which would make a significant positive contribution to the settlement was identified. These Opportunity Sites are existing sites which would represent a sustainable reuse and long term significant contribution to the overall appearance and amenity in the area together with the potential to create employment opportunities within the settlement. This strategy was brought forward in the following settlements;

- Ennis
- Kilrush
- Ennistymon
- Lahinch
- Scarriff/Tuamgraney
- Killaloe
- Kilkee
- Lisdoonvarna
- Tulla
- Newmarket-on-Fergus
- Sixmilebridge

7.5 Alternatives and Climate Change

In formulating and considering alternatives with regard to the future of the plan area, the importance of incorporating resilience to climate change, through provision of appropriate

adaptation measures has been a key consideration. The assessment of alternatives against their resilience to climate change will be a key factor in determining the overall preferred approach to be adopted by the County Development Plan area.

7.6 Preferred Alternative

Following an assessment and evaluation of the alternatives set out in this chapter together with round table discussions between the plan making and environmental teams the preferred way forward in relation to the future land-use plan for the County is a combination of **Option 3 (Strategic Planning Approach/Balanced Approach)** and **Options 5 (Strategic Planning for Sustainable Growth)**. Both options contain similarities in terms of preparing a Clare County Development Plan 2017-2023 with a defined plan area, within which the settlement hierarchy will be defined in line with the requirements of the core strategy. Areas of environmental sensitivity, including designated sites and natural flood plains located within or adjacent to the settlement areas will be included and zoned accordingly for their protection within the settlement boundary and others will be within the Plan boundary, as will areas at risk of flooding (defined as Flood Risk Zones A, B and C). This strategic planning approach aligns more closely with European and National Policy and regulation, directs development to serviced lands, focuses on town centres for service provision and supports Ennis as a ‘hub’ town and Shannon as a ‘gateway’. The settlement hierarchy remains on an evidence base and with the responsibility for the provision and management of water services (water supply and wastewater but excluding storm/surface water other than where sewage has been combined with surface water) being transferred to Irish Water they are committed to providing a strategic treatment capacity to facilitate the core (residential) strategies identified in this county development plan, subject to the availability of funding and environmental constraints. This alternative, in favouring strategic planning, which is carried out in a sustainable manner also aligns with Volume 7 (SIFP) of the CDP. The SIFP identifies the nature of development, economic growth and employment that can be sustainably accommodated within the Shannon Estuary which is a key feature of the Development Plan area. The SIFP in its process sought to;

- Facilitate the long term conservation of the Shannon Estuary as an entire ecosystem whilst enabling the development of a broad range of appropriate activities in a sustainable manner
- Encourage, facilitate and promote a balanced approach to harnessing the Estuary’s growth potential
- Ensuring careful protection, management and enhancement of the area’s natural resources
- Deliver a coordinated, sustainable and innovative approach to the optimisation of the estuarine resource through the continued proactive involvement of all key stakeholders

The preparation of the Environmental Sensitivity Map also fed into the assessment of alternatives through highlighting the overall vulnerability of the county using different indicators which served to inform the development and ultimate selection of the preferred option.

Chapter Eight - Assessment of Effects of Implementing the Clare County Development Plan 2017-2023

8.1 Introduction

This section is a summary of the detailed assessment of the objectives, land-use zonings and volumes contained within the Clare County Development Plan 2017-2023, which will identify where, if any, effects on the environment may occur. These may 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 Chapter 5, and the Strategic Environmental Objectives in Chapter 6, an assessment for any potential environmental effects from implementing the Clare County Development Plan 2017-2023 can be undertaken.

Three elements of assessment have been undertaken which include:

1. An assessment of the objectives of the Plan (See **Appendix A**);
2. An assessment of the land-use zonings and site specific development objectives (See **Appendix B**);
3. An assessment of cumulative and in-combination effects (See **Appendix C Tables 8.2 – 8.5**).

The assessment process has been undertaken using matrix assessments which reflect ratings in relation to potential significant effects on the environment as a result of implementation. The matrix assessment ratings used are as follows:

(+)	reflects a potential positive effect
(-)	reflects a potential negative effect
(+/-)	reflects that positive and negative effects are likely or that in the absence of further detail the effect is unclear
(0)	reflects a neutral or uncertain effect

Where there is a combination of these symbols (0/+ or 0/-) this indicates that any effect maybe neutral or positive, or neutral or negative depending on how the objective is delivered.

Where negative effects are identified mitigation measures are recommended to either include new objectives, or to amend or include additional text within the Plan objectives and/or zoning objectives.

8.3 Environmental Assessment and Evaluation

Strategic Environmental Assessment is an iterative process carried out in parallel with the development of the Clare County Development Plan 2017-2023 preparation process. The principal reason for doing so is to ensure that any negative environmental impacts are highlighted at an early stage enabling them to be 'designed' out as much as possible as early in the preparation process. The result is a more robust Plan which has had regard to the environmental issues identified within the Plan area and any remaining negative effects should be minimal and capable of being addressed through appropriate mitigation. This was achieved through the integration of the Environmental Assessment Officer, Heritage Officer, Architectural Conservation Officer and others in the discussions, meetings and preparation of the Plan in conjunction with the Planning Team. In addition, all other relevant departments were also consulted for e.g. Environment, Housing, Roads etc in order to ensure the Plan was as robust as possible and met the 3 pillars of sustainability.

8.4 Assessment of Plan Objectives

By assessing the Plan objectives in Volume 1 of the Clare County Development Plan 2017-2023 against the environmental objectives it identified where there were any incompatibilities and/or conflicts between them and where environmental considerations needed to be strengthened. Where considered necessary the assessment resulted in recommended mitigation for some objectives. The assessment matrix is included in **Appendix A** and mitigation is addressed in **Chapter 9** of this report.

Each Chapter of the Clare County Development Plan 2017 – 2023 list the objectives relating to the particular topic of that Chapter as outlined below;

Chapter 1	Introduction and Vision	Chapter 12	Marine and Coastal Zone Management
Chapter 2	Core Strategy	Chapter 13	Landscape
Chapter 3	Settlement Strategy	Chapter 14	Biodiversity, Natural Heritage and Green Infrastructure
Chapter 4	Housing	Chapter 15	Architectural, Archaeological and Cultural Heritage
Chapter 5	Community Development and Social Infrastructure	Chapter 16	Towns and Villages
Chapter 6	Economic Development and Enterprise	Chapter 17	Design and the Built Environment
Chapter 7	Retail	Chapter 18	Climate Change, Flooding and Low Carbon Strategy
Chapter 8	Physical Infrastructure	Chapter 19	Land Use and Zoning
Chapter 9	Tourism	Chapter 20	Implementation and Monitoring
Chapter 10	Rural Development & Natural Resources		
Chapter 11	Shannon Estuary		

Each Chapter's objectives were evaluated against the criteria in **Table 8.1**. The criterion considers whether or not the objectives were likely to improve conflict or have a neutral interaction with the provisions of the Plan.

Table 8.1 Criteria for Appraising the Effect of the Plan Objectives on the SEOs

Parameter	Compatibility Criteria			
Biodiversity	<div> <div>+</div> <div>Reflects a potential positive effect</div> </div> <div> <div>-</div> <div>Reflects a potential negative effect</div> </div>			
Population (incl. Human Health and Quality of Life)				
Soil & Geology	<div> <div>0</div> <div>Reflects a neutral or uncertain effect</div> </div> <div> <div>+/-</div> <div>Reflects that positive and negative effects are likely or that in the absence of further detail the effects is unclear</div> </div>			
Water				
Air Quality and Climatic Factors				
Material Assets				
Waste				
Water Supply				
Waste Supply				
Renewable Energy				
Cultural Heritage				
Landscape				

8.5 Land Use Zoning

In considering land appropriate for development for particular uses, SEA has contributed to identifying where sites are unsuitable; those that required amendment in terms of area, nature or extent; those suitable with specific requirements set out in site development objectives; and those which are generally acceptable.

Where the process has identified sites where the impact is uncertain due to location specific issues and where a small number of areas have been identified to have a potential negative effect on the environment, mitigation measures are proposed which are designed to limit or eliminate identified impacts. In addition, monitoring the implementation of the Plan, as discussed in **Chapter 10**, will ensure that if there is any impact it will be identified and appropriate mitigation can then be put in place.

In zoning land for different land-uses in the Clare County Development Plan 2017-2023, the zonings are categorised in accordance with Myplan.ie⁹. The zoning classifications and definitions are set out in **Table 8.2**.

⁹ Department of Environment, Community and Local Government Initiative

Table 8.2 Land-Use Zoning Classifications and Definitions

Agriculture
This zone is for the use of land for agricultural purposes and farming-related activities. Individual dwellings for permanent occupancy for family members of the landowner will be open for consideration subject to the objectives set out in Chapter 3 of this plan and normal site suitability considerations.
Airport
Land zoned for airport development shall be used for airport-related uses, buildings, infrastructure and services and compatible aviation-related businesses and industries.
Buffer Space
Buffer spaces are intended to provide a buffer of undeveloped land for the conservation of biodiversity, visual amenity or green space. Buffer spaces may include natural features such as floodplains, riparian zones, turloughs, valuable biodiversity areas included designated sites, amenity areas, woodlands, hedgerows, green spaces and archaeological features.
Commercial
The use of land zoned for 'commercial' purposes shall be taken to include the use of the lands for commercial and business uses including offices, service industry, warehousing and the facilitation of enterprise/retail park/office type uses as appropriate. Retailing is open for consideration in this area, provided that a sequential test is carried out and the lands are demonstrably the optimum location for the nature and quantum of retail development.
Community
The development of lands for community uses shall be taken to include the use of lands for community, civic, health services, public or educational uses including the provision of schools, community halls, healthcare facilities and any other facility that is intended to provide some form of community service. Public or private delivery is not a factor in this case.
Enterprise
Lands zoned for 'enterprise' shall be taken to include the use and development of land for high-end research and development, business, science and technology based industry, financial services, call centres/telemarketing, software development, enterprise and incubator units, small/medium manufacturing or corporate offices in high quality campus/park type development.
It is intended that such developments will have high quality architectural design and landscaping. This zoning allows for 'walk to' support facilities such as canteen, restaurant or crèche services which are integrated into employment units and are of a nature and scale to serve the needs of employees on the campus.
This zoning also allows for associated transportation infrastructure such as car and bicycle parking and bus stop shelters. This zoning excludes general retail, retail park outlets, motor sales/servicing activities and heavy industrial undertakings
Existing Residential
The objective for land zoned 'existing residential is to conserve and enhance the quality and character of the areas, to protect residential amenities and to allow for small scale infill development which is appropriate to the character and pattern of development in the immediate area and uses that enhance existing residential communities. Existing residential zoned land may also provide for small scale home-based employment uses where the primary residential use will be maintained.
General Industry
The use of land for general industry uses shall be taken to include the use for industrial processing or manufacturing of a scale and nature where there is significant goods, manufacturing and

related issues. Uses of this nature may result in the generation of emissions.

This type of industrial activity may also be subject to the SEVESO Directives, the main EU legislation dealing with the control of on-shore major accident hazards involving dangerous substances.

A mix of uses such as office-based or retail development is not considered appropriate in areas zoned for industrial development.

Light Industry

The use of land for light industry shall be taken to include uses where the primary activity is the manufacture of a physical product. The use for industry/manufacturing, incubator units, distribution, open storage, transport operating centres and the treatment/recovery of waste material is acceptable.

Processes carried out, or the machinery/plant installed on land zoned for Light Industry must be such that could be carried out or installed without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit. Uses such as office-based development or retail development are not considered appropriate in areas zoned for light industry, save where it is ancillary to the main use of the development.

Low Density Residential

This zoning refers to the use of lands to accommodate a low density pattern of residential development, primarily detached family dwellings. The underlying priority shall be to ensure that the character of the settlement/area is maintained and further reinforced by a high standard of design. Proposed developments must also be appropriate in scale and nature to the areas in which they are located.

Marine-Related Industry

Land zoned for marine-related industry shall provide for marine-related industry and large-scale uses that create a synergy with the marine use. Marine-related industry shall be taken to include the use of land for industry that, by its nature, requires a location adjacent to estuarine/deep water including a dependency on marine transport, transshipment, bulk cargo or where the industrial processes benefit from a location adjacent to the marine area.

Maritime/Harbour

The use of land for maritime/harbour related activity shall be taken to include the use of land, including harbours and piers, that will facilitate small-scale, water-based commercial or tourism activity and associated facilities including car parking facilities.

Neighbourhood Centre

It is intended that land zoned for 'neighbourhood centre' will be developed to provide an appropriate range of local services including commercial, retail and community uses, to support the population of the surrounding area.

Open Space

It is intended that lands zoned 'open space' will be retained as undeveloped open space, mainly for passive open space related activities. The open space/park areas could contain active play facilities such as children's play areas but these would only be a small component of the overall areas involved.

Recreation

This category of zoning provides for the use of land for the provision of sports grounds/playing pitches, golf courses, tennis courts and other active indoor and outdoor recreational facilities that contribute to meeting the leisure, recreation and amenity needs of the immediate community and/or the wider area.

Residential

Residential use shall be taken to primarily include the use of land for domestic dwellings. It may also provide for a range of other uses particularly those that have the potential to foster the development of new residential communities e.g. schools, crèches, open spaces etc.

Tourism

Land zoned for tourism development shall be used for a range of structures and activities which are primarily designed to facilitate tourism development and where uses are mainly directed at servicing tourists/holiday makers and visiting members of the public.

Mixed Use

The use of land for 'mixed use' developments shall include the use of land for a range of uses, making provision, where appropriate, for primary and secondary uses e.g. commercial/retail development as the primary use with residential development as a secondary use. Secondary uses will be considered by the local authority having considered the particular character of the given area.

In town centres areas that have been zoned mixed-use a diverse range of day and evening uses is encouraged and an over-concentration of any one use will not normally be permitted.

Transport Utilities

It is intended that land zoned 'transport utilities' will be reserved for the provision of infrastructure required to move people and goods by rail, bus, car or bicycle including existing and proposed train stations, bus stations and coach parks.

University Zone

It is intended that lands identified as 'University Zone' will be reserved to accommodate development and uses associated with higher education including research and development, student accommodation, student support services, enterprise/start-up businesses units, recreation and social facilities and open spaces.

Utilities/Infrastructure Safeguard

It is intended that land zoned 'utilities/infrastructure safeguard' will be reserved for the existing and future provision of key infrastructural services and the upgrading of existing services and infrastructure relating to road, rail, air, electricity, telecommunications, gas, water and waste water treatment services.

The Plan contains a land-use zoning matrix which lists the most common forms of development and classifies what the proposed use is acceptable in principle, or otherwise, on lands that are zoned for a particular use, so as to promote the orderly development of settlements and to guide future development to the most appropriate locations within the Plan area.

In addition to an assessment of the objectives of the Plan, an assessment of the land-use zonings within the Plan area has been undertaken, specifically in relation to residential use including high and low density, Opportunity Sites and other land-uses include industry, enterprise, Tourism and infrastructure safeguards etc.

The assessment of land-use zonings involved both desk top (GIS, aerial photography) and on-site assessment. This process resulted in an on-going flow of environmental information with regard to site specific land-use zoning proposals. Consequently, the iterative nature of the SEA process has meant that in the evolution of the proposed land-use zonings presented in the Plan, they have been informed by environmental assessment. This has led to a number of zoning adjustments in the course of its preparation in relation to boundaries, zoning removal, and suggested inclusion of alternative areas and in some cases specific mitigation provisions within specific zoning objectives. The Plan also had the benefit of the outcome of the appropriate assessment process and Strategic Flood Risk Assessment, both of which the SEA had regard to in its assessment.

8.5.1 Assessment of Zoned Lands and Environmental Issues

The baseline information presented in **chapter 5** shows how the plan area is characterised by a number of environmental sensitivities. Some of these sensitivities will affect the potential development of all land-uses within the plan area. The sensitivities include:

- High to extreme groundwater vulnerability throughout the plan area presents a significant environmental vulnerability that needs to be considered in all future land-uses within the Plan area.
- Waste water treatment is a particular issue throughout the County of Clare both from a rural and urban perspective. Within the town of Ennis Clareabbey and Clonroadmore are over capacity and therefore cannot accommodate any additional loads brought about from development and Clarecastle village is not currently served by a WWTP. Within many rural areas and settlements throughout the county there is either no WWTP present, they are over capacity or insufficient treatment is occurring. As a pre-requisite to any development taking place on zoned lands within the county, it is critical to have the infrastructure upgrade in place to accommodate future developments. An objective in the Plan must seek to ensure that, prior to the commencement of any development; future development can be serviced by wastewater treatment which complies with the Water Framework, the EU Urban Wastewater and the Birds and Habitats Directive. This issue and others has been highlighted in all relevant assessments of settlements as part of the SEA process contained in **Appendix B**.

It should also be noted that in the case of all settlements and zonings within flood zones identified in **Figure 5.10.7** “Flood Zones A, B and recorded flood events” within the plan area that:

- Flood defences that have been/are being put in place are based on protecting existing land-uses of any benefitting lands and NOT any potential future change in use or new development.
- Impacts of climate change in relation to future flooding need to be considered with regard to stipulating development specifications which provide for resilience to flood risk and recommendations given accordingly.

8.6 Cumulative/In-combination Effects

This section of the Environmental Report provides an outline of the potential cumulative effects on the environment as a result of implementation of the County Development Plan.

Cumulative effects are referred to in a number of SEA Guidance documents and are defined in the EPA Sea Process Checklist 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. These effects can result from individually minor but collectively significant actions taking place over time or space” (EPA SEA Process Checklist (2011)). These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources. The assessment of cumulative effects is a requirement of the SEA Directive (2001/42/EC).

The 2004 Guidelines produced by the DECLG outlines that the SEA process is in a good position to address cumulative effects for which the Environmental Impact Assessment process is not equipped to deal with. Due to the strategic nature of the SEA process a forum is provided in which cumulative effects can be addressed. The EPA is presently undertaking a study in relation to cumulative effects and it is anticipated that a draft *Cumulative Effects – Best Practice Guidance Document* will be available soon to SEA practitioners.

The EPA Strive Report 2007-2013 on ‘Integrated Biodiversity Impact Assessment’ describes cumulative effects as incremental effects resulting from a combination of two or more individual effects, or from an interaction between individual effects – which may lead to a synergistic effect (i.e. greater than the sum of the individual effects), or any progressive effect likely to emerge over time.

8.6.1 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”.

8.6.2 Planning Context

The National Spatial Strategy (NSS) sets out the national context for spatial planning with the overall aim of achieving a better balance of economic, social and physical development. This NSS together with the Regional Planning Guidelines (RPGs) must inform the development within County Clare. The RPGs are a means by which to implement the NSS by providing detailed policy and guidance. These RPGs provide a long term planning framework for the development of a region, thereby providing a strategic forum in which cumulative effects can be identified. The Planning and Development Act clarifies the key obligations required of Planning Authorities whilst envisaging close alignment between the NSS, the RPGs, Development Plans and Local Area Plans. County Clare lies within the geographical area of the RPGs for the Mid-West Area. In accordance with national and European legislation, SEA was undertaken to assess the potential significant environmental impacts and effects of the RPGs. Environmental factors have been integrated into the development of the RPGs and the related decision-making process through the SEA process, thereby addressing cumulative effects within the broad context of the Mid-West Area.

The Clare County Development Plan 2017 - 2023 sets out the strategy for proper planning and sustainable development of the County. There are a number of potential pressures on the environment from the implementation of the policies and objectives contained within the Plan. The key environmental sensitivities affected by these potential pressures are addressed in the following sections.

8.6.3 Assessment Approach

The following approach has been undertaken in relation to assessing the potential cumulative and in-combination effects of the County Development Plan. It includes;

- An assessment of International, National, Regional and Local Plans, Policies and Programmes that have the potential for cumulative or in-combination effects
- An assessment of the County Development Plan Objectives 2017- 2023 in relation to the other objectives contained within Volumes 5,6,7,8 & 9
- An assessment of the key elements of the County Development Plan against one another to identify any internal conflict between the policies and objectives (In-combination effects)

8.6.4 Cumulative effects with other plans and programmes

This section focuses on international, national, regional and local plans, policies and programmes that have the potential for cumulative or in-combination effects with the County Development Plan. The assessment is contained in **Appendix C Tables 8.1 to 8.4**. In addition an assessment of the in-combination and cumulative effects of Volumes 5, 6 and 7 are undertaken below. Further details in relation to mitigation measures associated with this assessment of the incorporated volumes can be found in **Chapter 9**.

Table 8.3 Assessment of County Development Plan in combination with Volumes 5, 6 & 7

Policy, plan or programme	Summary of objectives	Possible impacts from policy plan or programme?	Is there a risk of significant “in-combination” effects with other policies, plans or programmes and the County Development Plan 2017-2023
Wind Energy Strategy, Volume 5 – Clare County Development Plan 2017-2023	As part of this County Development Plan 2017- 2013, Clare County Council has produced a Wind Energy Strategy for the County. The Wind Energy Strategy sets out a plan led approach to wind energy development in the County in terms of identifying strategic areas for wind energy development of local, county, regional and national importance and to plan for technological advances in wind farms that may occur in the future.	Yes, potential impacts may arise due to the proposed extension to the Lower River Shannon SPA (Site Code 004077) which was not taken into account at the time of preparation of the strategy as it was not notified at that point. However, in accordance with the requirements of the Department of Environment, Community and Local Government as set out in Circular PL20-13, the Clare Wind Energy Strategy 2011-2017 has not been reviewed as part of the preparation of Plan. Circular PL20-13, dated 20th December 2013, states that in the cyclical review of a Development Plan it is advised that, until the national policy review processes have concluded in relation to the Wind Energy Development Guidelines and the Renewable Energy Export Policy and Development Framework, local authorities should defer amending their existing Development Plan	Yes, plans and projects of particular relevance include the EirGrids Grid 25 Programme, Regional Planning Guidelines for the Mid-Western Region, the Clare CDP and the Renewable Energy Strategy. Existing projects and infrastructure (constructed and permitted) should also be taken into account.

Policy, plan or programme	Summary of objectives	Possible impacts from policy plan or programme?	Is there a risk of significant “in-combination” effects with other policies, plans or programmes and the County Development Plan 2017-2023
		<p>policies and should instead operate their existing Development Plan policies and objectives until the completion of these processes and further advice is issued.</p> <p>Therefore, this issue has not been resolved. In line with the advice of the Department, Clare County Council proposed to include the current WES in the Clare County Development Plan 2017 – 2023. There are no changes to the contents of the strategy and therefore it will not undergo reassessment.</p>	
Renewable Energy Strategy, Volume 6 - Clare County Development Plan 2017-2023	<p>As part of this County Development Plan 2017- 2023, Clare County Council has produced a Renewable Energy Strategy for the County. The Renewable Energy Strategy sets out a plan led approach to renewable energy development in the County in terms of identifying strategic areas for renewable energy development of local, county, regional and national importance and to plan for technological advances in renewable</p>	<p>Yes, potential impacts may arise due to energy-related developments which could affect European sites.</p> <p>Clare County Council proposes to include the current RES in the Clare County Development Plan 2017 – 2023. There are no fundamental changes to the contents of the strategy and therefore it will not undergo reassessment. The only minor changes to the strategy are as</p>	<p>Yes, both this Strategy and the Clare CDP could lead to development which could have in-combination effects on the European sites.</p> <p>CDP Objectives 8.38 will ensure the proper implementation of the RES throughout the lifetime of the plan and that all proposals are considered and implemented having full regard to the requirements of the Habitats Directive.</p>

Policy, plan or programme	Summary of objectives	Possible impacts from policy plan or programme?	Is there a risk of significant “in-combination” effects with other policies, plans or programmes and the County Development Plan 2017-2023
	<p>energy that may occur in the future. The Renewable Energy Strategy provides the baseline necessary for County Clare to maximise its marine renewable development potential and aims to ensure that the opportunities in marine/ocean energy relating to enterprise, economic development, energy security and potential future electricity export are fully exploited.</p>	<p>outlined:</p> <ul style="list-style-type: none"> • References to the CDP are updated to reflect the timescale of the CDP 2017-2023; • References to various volumes of the CDP are updated to reflect the volumes of the CDP 2017-2023; • References to ‘<i>Habitats Directive Assessment</i>’ have been amended to ‘<i>Appropriate Assessment</i>’; • The timeline of the RES has been changed to from ‘2014 – 2020’ to ‘2017-2023’; • Correction of minor spelling errors. <p>The NIR for the RES identified a number of potential significant adverse effects that could arise from the contents of the implementation of the RES including hydrological, water quality, physical disturbance and cumulative impacts. Mitigation measures were proposed in the NIR and incorporated into the RES. Please see Chapter 9 for details in relation to the recommended</p>	

Policy, plan or programme	Summary of objectives	Possible impacts from policy plan or programme?	Is there a risk of significant “in-combination” effects with other policies, plans or programmes and the County Development Plan 2017-2023
		<p>mitigation measures.</p> <p>CDP Objectives 8.38 will ensure the proper implementation of the RES throughout the lifetime of the plan and that all proposals are considered and implemented having full regard to the requirements of the Habitats Directive.</p>	
Strategic Integrated Framework Plan for the Shannon Estuary Volume 7 – Clare County Development Plan 2017-2023	<p>The SIFP was incorporated into the County Development 2011-2017 by way of a Variation and now forms Volume 7 of the current County Development Plan 2017 – 2023. The Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary is an inter-jurisdictional land and marine based framework plan to guide the future development and management of the Shannon Estuary. The CDP 2017-2023 zones lands at two locations for marine-related industry.</p>	<p>Given the significant level of Environmental assessment undertaken as part of the SIFP process which included an extensive alternatives assessment coupled with the inclusion of extension mitigation measures both within the SIFP and through the Variation process and in addition through the current process of producing a new CDP it is felt that no significant environmental effects will arise from the implementation of the SIFP on its own. Clare County Council are also committed to the implementation of the SIFP as per objective 11.2 of the 2017 – 2023 CDP which aims to support and implement the inter-jurisdictional</p>	<p>Yes, both this Plan and the Clare CDP could lead to development which could have in-combination effects on the European sites.</p>

Policy, plan or programme	Summary of objectives	Possible impacts from policy plan or programme?	Is there a risk of significant “in-combination” effects with other policies, plans or programmes and the County Development Plan 2017-2023
		Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary in conjunction with the other relevant local authorities and agencies. In supporting this implementation the use of SEA and HDA is inherent in the decision making at project level through the inclusion of SIFP Objective SEA 1.1 which identifies the need for a holistic approach to the use of SEA and AA as optimisation tools in safeguarding the critical environmental resources, resolving potential conflicts and promoting evidenced based sustainable decision making.	

8.6.5 Other elements of the Plan

Clusters

These are the smallest type of settlement in the hierarchy and their character reflects traditional building patterns with a loose collection of rural dwellings clustered around one or more focal points. Focal points may include rural houses around a crossroad or a community or social facility such as a shop, school, church or post office. The strategy for these settlements is to facilitate a small number of additional dwellings and/or small enterprises to consolidate the existing pattern of development around the focal points and utilise existing services in the area. There are 92 clusters identified across the four municipal districts. Objective CDP 3.7 Clusters seeks to maintain the existing character of the clusters throughout the county from future additions and to only allow for very small scale growth. This reflects positively on the Strategic Environmental Objectives as assessed through Appendix A.

Chapter Nine - Mitigation

9.1 Introduction

Section (g) of Schedule 2(B) of the SEA Regulations (Annex 1(g) of the SEA Directive) requires the Environmental Report to describe the measures envisaged to prevent, reduce and/or offset as fully as possible any significant adverse effects on the environment from implementation of the Clare County Development Plan 2017-2023. Mitigation involves ameliorating significant negative effects via prevention and/or by reducing or off-setting such effects.

In the preparation of the Clare County Development Plan 2017-2023, 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 Plan objectives and land-use zonings. A detailed assessment of both the plan objectives and land-use zonings is undertaken in **Chapter 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 Plan. The recommended mitigation measures for the plan objectives are set out in **Table 9.1** and column two of the table indicates how the measures were incorporated into the Plan.

The recommendations for the site specific land-use zonings are incorporated under **Appendix B** of this report. These fed into the process of identifying and zoning land areas for potential appropriate land-uses in the Plan and have fed into the supporting technical guidance as set out in Volume 2 of the Plan.

Overarching recommendations are incorporated throughout the report and are clearly set out at the end of each chapter of the SEA ER and in the final chapter (11) of this report. In addition within each settlement contained in Volume 2 the references to the mitigation measures identified in this Environmental Report are also outlined.

9.2 Mitigation Measures

It is recommended that all legislation, policies and guidelines outlined in both the Clare County Development Plan 2017-2023 and this Environmental Report and are adhered to. In addition, future legislation, policies and guidelines should also be fully integrated into the Plan and Environmental Report. In addition, many impacts will be more adequately identified and mitigated at project and EIA level. In general terms, all proposals for development will be required to have due regard to environmental considerations outlined in this Environmental Report and associated Natura Impact Report. Proposals for development which are deemed contrary to the environmental objectives and policies contained within the Plan will not normally be permitted, and if permitted, should contain development specific mitigation measures which have been proven beyond scientific doubt, to remove significant negative effects.

In this section the mitigation measures are discussed under each environmental parameter heading. Subsequently, specific mitigation measures relating to Volumes 5, 6 & 7 together with those arising from Variation No. 3 of the 2011 – 2017 CDP pertaining to the Limerick Northern Distributor Route are also outlined within this chapter.

9.2.1 Biodiversity, Flora and Fauna

No projects (either individually or in combination with other plans or projects) giving rise to significant direct, indirect, secondary impacts, etc. on European sites due to their size/scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Clare County Development Plan 2017-2023.

Where relevant, projects, arising from this Clare County Development Plan 2017-2023 should be screened by the applicant for the need to undertake Appropriate Assessment in accordance with Article 6 (3) of the Habitats Directive.

Mitigatory policy – Proposed for inclusion in the CDP within Chapter 14

Freshwater Pearl Mussel

It is an objective of the development plan:

- a) To have regard to any impacts of development within or in close proximity to the Cloon freshwater pearl mussel catchment including impacts arising from downstream within the Shannon Estuary and Clonderlaw Bay.
- b) To have regard to the Cloon *Freshwater Pearl Mussel Sub-Basin Management Plan*
- c) To ensure careful consideration is given to all proposed developments within the Doonbeg, Shannon – Graney/Scarriff and the Shannon – Woodford *Margaritifera* (Freshwater Pearl Mussel (FPM)) Sensitive Areas.
- d) In ensure full compliance with the Habitats Directive in relation to any future developments with close proximity to a freshwater pearl mussel catchment or a sensitive area.

9.2.2 Population, Human Health and Quality of Life

Criteria for one-off housing in the countryside should consider all related policies and environmental heritage issues outlined in the Clare County Development Plan 2017-2023.

9.2.3 Soil and Geology

The Council will facilitate harnessing the potential of the area's natural resources while having regard for legislation and best practice and ensuring that the environment and rural and residential amenities are appropriately protected.

Mitigatory policy – Proposed for inclusion in the CDP within Chapter 14

Contaminated Lands

It is an objective of the County Development Plan:

Prior to the redevelopment of an Opportunity Site or a site previously know to include an operation with the potential for high environmental impact such as petrol stations, gasworks or coal yards due diligence should be carried out on the site to address;

- The initial site assessment
- The Ecological aspects of soil and groundwater contamination
- The preparation of a remedial action plan
- Site aftercare plan

Soils

It is an objective of County Development Plan:

To have regard to “Soil sealing” (the covering of the ground by an impermeable material) in particular within the design and development of urban areas by adopting alternatives which decrease the risk of flooding and loss of biodiversity.

9.2.4 Water

The provision of good quality water supply and effective wastewater disposal infrastructure are critical requirements for the future economic development, quality of life and sustainable growth of the County. All future development should be cognisant as to the level of investment that will be required in the provision of water services – particularly in environmentally sensitive areas - to ensure that the provision of water services does not negatively impact on habitat quality, species diversity or other environmental considerations

Mitigatory policies – Proposed for inclusion in the CDP within Chapter 8

General Policies in relation to Water Services

- To facilitate the provision of integrated and sustainable water services through effective consultation with Irish Water on the layout and design of water services in relation to the selection and planning of development areas and the preparation of master plans and SDZs;
- To ensure that adequate water services will be available to service development prior to the granting of planning permission for those developments and to require developers to consult Irish Water regarding available capacity, prior to applying for planning permission;
- To ensure that development proposals comply with the standards and requirements of Irish Water in relation to water and wastewater infrastructure to facilitate the proposed developments

Water Supply

- To protect both ground and surface water resources and to work with Irish Water to develop and implement Water Safety Plans to protect sources of public water supply and their contributing catchment;

Wastewater Services

- To ensure that the Local Authority provides adequate storm water infrastructure in order to accommodate the planned levels of growth within the plan area and to ensure that

appropriate flood management measures are implemented to protect property and infrastructure;

- b) To require all new development to provide a separate foul and surface water drainage system and to incorporate sustainable urban drainage systems;
- c) To prohibit the discharge of additional surface water to combined (foul and surface water) sewers in order to maximise the capacity of existing collection systems;
- d) To support Irish Water in the promotion of effective management of trade discharges to sewers in order to maximise the capacity of existing sewer networks and minimise detrimental impacts on sewage treatment works;
- e) To ensure the changeover from septic tanks to collection networks in all cases where this is feasible (subject to connection agreements with Irish Water) and that all new developments utilise and connect to the public wastewater infrastructure. The provision of individual septic tanks and treatment plants in the plan area will be strongly discouraged to minimise the risk of groundwater pollution. Where such facilities are permitted, full compliance with the prevailing regulations and standards, including the EPA's Code of Practice Wastewater Treatment and Disposal Systems Serving Single Houses (PE. ≤10) (EPA 2009), as may be amended, will be required;
- f) To ensure that private wastewater treatment plants, where permitted, are operated in compliance with their wastewater discharge license, in order to protect water quality;
- g) To require existing developments that are in close proximity to a public sewer to connect to that sewer, subject to a connection agreement with Irish Water.

9.2.4.1 Flooding risk mitigation and management

Flood Zone A = Highest probability of flooding (Flood Zone A),

Flood Zone B = Moderate risk of flooding (Flood Zone B)

Flood Zone C = Low Risk of Flooding (Flood Zone C)

Addressing flood risk in the design of new development should consider the following:

- The most vulnerable land uses should be located in areas of lower flood risk;
- Less vulnerable land uses (e.g. parks, gardens and open spaces for natural habitats, etc.) should be located in areas of higher flood risk;
- There should be a degree of flexibility in the location of land uses to reflect existing or future sustainable urban structure; and
- Less vulnerable uses should be provided at ground floor level in areas of greater flood risk where a sustainable mix of uses is sought.

Site layout, landscape planning and drainage of new development must be closely integrated to play an effective role in flood-reduction. As such, proposals should clearly indicate:

- The use of Sustainable Drainage Systems (SuDS) to manage surface water run-off.
- Water conveyancing routes free of barriers such as walls or buildings.
- The signing of floodplain areas to indicate the shared use of the land and to identify safe access routes.

To ensure that adequate measures are put in place to deal with residual risks, proposals should demonstrate the use of flood-resistant construction measures that are aimed at preventing water from entering a building and that mitigate the damage floodwater causes to buildings. Alternatively, designs for flood resilient construction may be adopted where it can be demonstrated that entry of floodwater into buildings is preferable to limit damage caused by floodwater and allow relatively quick recovery. Such measures include the design and specification of internal building services and finishes. Further detail on flood resilience and flood resistance are included in the Technical Appendices of the Planning Guidelines, *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (DoEHLG, 09). To implement the recommendations and provisions of the DEHLG's Guidelines for planning authorities entitled *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (DoEHLG, 09).

A sequential approach to flood risk management based on avoidance, reduction and then mitigation of flood risk as the overall framework for assessing the location of new development shall be adopted.

Development in areas at risk of flooding, particularly floodplains, shall be avoided by not permitting development in flood risk areas unless: it is fully justified that there are wider sustainability grounds for appropriate development; unless the flood risk can be managed to an acceptable level without increasing flood risk elsewhere; and, where possible, it reduces flood risk overall.

To require all significant development proposals seeking to locate in Flood Risk Areas to include detailed information on the undertaking of a Sequential Approach and Justification Test – as set out in the DoEHLG planning guidelines, *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (DoEHLG, 09) as well as proposals for the sustainable storage or attenuation of runoff/discharges.

To ensure that all proposed Greenfield residential and commercial developments use 'Sustainable Urban Drainage Systems' in accordance with best current practice.

The Council shall fulfil its responsibilities under the Flood Risk Directive 2007/60/EC and cooperate with the Office of Public Works in the further development of the Shannon Catchment-based Flood Risk Management Plan as necessary. Any relevant recommendations and outputs arising from the Flood Risk Management Plan will be incorporated into the Development Plan.

9.2.4.2 Water Protection

To implement the relevant provisions of all Water Pollution Legislation.

When adopted, the relevant policies and objectives of the National River Basin Management Plan 2015-2021 and associated programme of measures for the relevant catchment management units for the plan area shall be integrated into the Plan through amendment or otherwise.

Land uses shall not give rise to the pollution of ground or surface waters during the construction or operation of developments. This shall be achieved through the adherence to best practice in the design, installation and management of systems for the interception, collection and appropriate disposal or treatment of all surface waters and effluents.

9.2.4.3 Air and Climate

Address climate change issues through the Renewable Energy policies outlined in Volume 6 of the Clare County Development Plan 2017-2023.

To implement the provisions of EU Directives and National legislation on air and noise pollution in conjunction with other agencies as appropriate.

9.2.4.4 Material Assets

Transportation and Energy

It is against guidance and best practice to permit developments that require direct access onto National Routes and should be avoided wherever possible.

The bus service aspect of public transport forms a fundamental element of the overall public transport infrastructure for developing a strong regional network linking the key towns of Ennis/Shannon/Limerick with frequent high quality bus services. The provision of frequent bus services at a sub-regional level between Ennis, Shannon and key towns such as Ennistymon, Kilrush and Scarriff would enhance a strong regional public transport network.

In order to promote the implementation of the Government's Energy White Paper

"Delivering a Sustainable Energy Future for Ireland" The Energy Policy Framework 2007-2020 (DCMNR, 2007)" the council will support any appropriate initiatives taken to provide for more sustainable forms of energy use which minimise emissions to air of greenhouse gases in accordance with the Kyoto Protocol, any subsequent international agreement and the National Climate Change Strategy.

Waste Management

To ensure the implementation of an integrated approach to waste management for any proposed development(s) within the lands in question - to include wastes generated during the construction phase of development as well as the operation and maintenance phases - having particular regard to "Best Practice Guidelines on the preparation of Waste Management Plans for Construction & Demolition Projects" (DoEHLG, 2006).

Mitigatory policies – Proposed for inclusion in the CDP within Chapter 8

Sludge management

It is an objective of Clare County Council:

To work with Irish Water to find a sustainable and long term solution for the production, minimisation and beneficial reuse of water sludge as a by-product in order to minimise risk to human health and the environment.

9.2.4.5 Cultural Heritage (including Archaeology and Architecture)

Many areas within Heritage Landscapes contain significant concentrations of National Monuments. Applicants are advised that developments will be evaluated to ensure that both monuments and their settings are protected to the standards required by the relevant statutory authorities.

Secure the protection (i.e. preservation in-situ or at a minimum protection by record) of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act 1994, their setting and associated 'Zones of Archaeological Potential'.

Seek suitably qualified archaeologists to carry out surveys and impact assessments for all planning applications for new development, redevelopment, any ground works, refurbishment, and restoration/conservation within or adjoining sites included in the 'Record of Monuments and Places', as established under National Monuments (Amendment) Act, 1994 or within their 'Zones of Archaeological Potential'. Clare County Council shall have regard to the advice and recommendations of the Prescribed Bodies in relation to undertaking, approving or authorising development.

Require archaeological surveys, test excavation and/or monitoring for development proposals in areas of archaeological importance, if the application is likely to impact upon in-situ archaeological structures or deposits. Foreshore surveys or any survey carried out for underwater archaeological purposes requires licensing by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

Ensure that development within the vicinity of a Recorded Monument(s) or Zone(s) of Archaeological Potential do not seriously take from the setting of the feature, and is sited and designed appropriately.

New developments shall not result in any significant loss in the architectural integrity, quality or character of an area, where appropriate. Planning applications may be required to be accompanied by an assessment undertaken by an accredited conservation architect, where appropriate, detailing the impacts of the relevant development upon the special interest and character of the surrounding architectural heritage. Clare County Council shall be consulted at an early stage in this regard in order to determine whether there is a need for such an assessment or for specific mitigation measures.

To consider further amendments to the record of Protected Structures as appropriate with regard to the National Inventory of Architectural Heritage.

9.2.4.6 Landscape

Central to the Plan is the concept of good urban design and issues surrounding new areas for development such as street design including building height and street width, historic context, cycle facilities will be addressed through the implementation of DEMURS – Design Manual for Urban Roads and Streets, 2013.¹⁰

The current Plan contains policies which protect vulnerable landscapes from insensitive development. Local landscape including surface water resources and field boundaries make a significant contribution to the character and local distinctiveness of both the urban and rural landscape. These also need protection from a nature conservation perspective and the management of features of the landscape such as traditional field boundaries, important for the ecological coherence of the Natura 200 network and essential for migration, dispersal and genetic exchange of wild species should be encouraged and has been integrated into the assessment of land use zoning.

Settlement and the Western Corridor Working landscapes:

Applicants are advised that the highest standards will be applied at all stages of the evaluation of site suitability, site design and the design and management of all installations for the interception, storage and treatment of all effluents.

Heritage Landscapes

Plans, policies and development decisions in these areas will always need to simultaneously take account of scenic, ecological and historic considerations. Landowners and residents, on the other hand, are likely to experience significantly more scrutiny about where and how they carry out developments in these areas. It is hoped that additional resources can be focussed on proposed developments in these areas to provide both the assistance to residents and assurance to the wider community – to ensure that communities continue to be renewed while also ensuring that heritage is sustained.

Planning applications in Heritage Landscapes will generally be required to prepare landscape and visual impacts assessments to demonstrate that these objectives are being achieved.

The majority of the areas within Heritage Landscapes contain sites, species habitats and natural resources that are protected under the provisions of the Habitats Directive and/or the Birds Directive. Applicants will be expected to familiarise themselves with the requirements of the Directive and should be aware of the likely need to carry out a Habitats Directive Assessment in accordance with the requirements of the Habitats Directive *in tandem with the preparation of designs*.

The majority of the areas within Heritage Landscapes contain ground and surface waters that are sensitive to the risk of pollution. Applicants are advised that the highest standards will be applied at all stages of the evaluation of site suitability, site design and the design and management of all installations for the interception, storage and treatment of all effluents.

¹⁰ <http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/FileDownload,32669,en.pdf>

It is recognised that within Heritage Landscapes these requirements will place yet another burden on applicants who will also need to demonstrate compliance with the onerous requirements of the Habitats Directive and the Water Framework Directive. For this reason, it will be Council policy to investigate the feasibility of offering pre-application technical assistance to applicants on appropriate sites within these areas to minimize any disadvantages that might otherwise occur.

Shannon Estuary Working Landscape

A Landscape Character Assessment for Clare identified the Fergus Estuary as ‘high sensitivity’. Applicants will be expected to familiarise themselves with these requirements and should be aware of the likely need to carry out a Habitats Directive Assessment in accordance with the requirements of the Habitats Directive in *tandem with the preparation of designs*. Applicants are advised that the highest standards will be applied at all stages of the evaluation of site suitability, site design and the design and management of all installations for the interception, storage and treatment of all effluents.

Fergus Estuary

A Landscape Character Assessment for Clare identified the Fergus Estuary as ‘high sensitivity’. The Landscape Character Assessment for Clare identified modern unsympathetic development as being a threat to the landscape quality in the Fergus Estuary. Careful consideration should be given to new developments along the estuary shoreline due to exposed nature and probability of development being highly visible.

Scenic Routes

In such area, the Council will aim to protect sensitive areas from injurious development, while providing for development and change that will benefit the rural community. There is a need to protect and conserve views and prospects adjoining public roads throughout the County where these views are of high amenity value. In conserving views, it is not proposed that this should give rise to the prohibition of development along these routes but development, where permitted, should not seriously hinder or obstruct these views and should be designed and located to minimise their impact.

Planning Applications that have the potential to significantly adversely impact upon valuable and sensitive landscapes and protected views shall required to be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape. The Council shall be consulted at an early stage in this regard in order to determine whether there is a need for such an assessment or for specific mitigation measures.

9.3 Mitigation Measures associated with Volume 7 - SIFP

The SIFP is incorporated into *Chapter 11 - The Shannon Estuary* of the County Development Plan written statement and are also included within this chapter of the SEA ER to ensure any

future development arising from the identification of the Strategic Development Locations (SDLs) at Cahiracon and Moneypoint are mitigated.

Table 9.2 outlines the over-arching mitigation measures in accordance with the Strategic Environmental Objectives identified through the SIFP process and which should be strictly adhered to prior to and during any development associated with either a Strategic development Location or an Area of Opportunity. The mitigation measures are listed under each of the SEA topics. The adherence to and application of these measures which is linked to the specific SIFP objectives contained in Chapter 11 of the written statement will ensure no residual significant effects.

Table 9.2 Over-arching mitigation measures arising from the SIFP SEA

Number	Mitigation Measure
Biodiversity Flora and Fauna	
BFF MM 1	As per objective SIFP ENV 1.6 the HDA and mitigation will ensure that proposed developments will not have an impact and take full account of the habitats and species, water quality, ecology, risk of disturbance and flood risk areas as per the Shannon CFRAMS. Provide for sufficient riparian buffer zones along the Natura 2000 site to maintain the integrity of the site.
BFF MM 2	At a project level it is not sufficient to defer the production of construction method statements these should be completed at the project design stage and subject to Habitats Directive Assessment.
BFF MM 3	Requirements for consents and the design of project level mitigation for Strategic Development Locations should be covered in the overall assessment of the site.
BFF MM 4	While Strategic Development Locations have been put forward should issues arise under Article 6(3) of the Habitats Directive at a project level they may require assessment. Should this assessment produce a finding of potential adverse effects on the integrity of a Natura 2000 site an alternative solution will be required.
BFF MM 5	In selecting the alternative solution it will be necessary to comply fully with Article 6(3) (and, if warranted, Article 6(4), including compensatory measures) of the Habitats Directive.
BFF MM 6	Pre-construction surveys should be conducted by suitable qualified ecologists in areas of future development which require the loss of structures, trees or suitable feeding areas for nesting bird and bat species. Should any important species be found during the surveys the sequential approach of avoid, reduce or mitigate should be adopted to prevent significant effects.
BFF MM 7	A “No net loss” principle for habitats which are priority in terms of their structure and function within the Natura 2000 site should be adopted for the Lower Shannon Estuary ecosystem.
BFF MM 8	The Steering Group structure established as part of the SIFP should continue to meet in order to facilitate dialogue between industrial operators and nature conservation bodies such as the NPWS and IFI.
Flood Risk Mitigation Measures	
BFF MM 9	Any proposal either within a Strategic Development Location or an alternative site at moderate or high risk of flooding this is considered acceptable in principle must demonstrate that appropriate mitigation measures can be put in place and that residual risks can be managed to acceptable levels.
BFF MM 10	Any development within a Strategic Development Location shall have regard to the site specific issues set out in the Shannon CFRAMS once available.

	<ul style="list-style-type: none"> Development across the Strategic Development Location should be allocated sequentially, and within Flood Zone C, then B, then A preferentially, but should not be so rigidly applied that development is constrained to unsustainable levels or does not deliver the mix of development type required. Within a Strategic Development Location or an alternative site a sequential approach to flood risk management based on avoidance, reduction and then mitigation of flood risk shall be adopted as the overall framework for assessing the location of new development. This relates largely to coastal flooding but in some cases may also relate to fluvial flooding. The use of Sustainable Drainage Systems (SuDS) as appropriate in accordance with best current practice to manage surface water runoff and water conveyancing routes free of barriers such as walls or buildings should be adopted where possible on Strategic Development Locations.
Cultural Heritage Mitigation Measures	
CAAH MM 1	Archaeological surveys should form part of the archaeological impact assessment for all planning applications for new development or redevelopment to inform appropriate design and mitigation of any potential impacts identified on terrestrial and/or underwater archaeological features. This assessment should utilise the archaeological and cultural heritage datasets generated by the SIFP project.
Human Health related Mitigation Measures - Green Infrastructure	
PHH MM 1	Councils will provide for the long-term protection and improvement of the quality of the natural environment within the plan area and provide ecological and recreational linkages in order to enhance biodiversity, the conservation status of special habitats; air, water and soil quality as well as the amenity value of these areas.
PHH MM 2	Councils will create an integrated and coherent green infrastructure network to enhance biodiversity and quality of life, provide for sustainable water management and a green setting for the urban area.
Water Related Mitigation Measures	
W MM 1	To ensure the impacts from development/change in land use practices (including flood plain development) minimises interference with aquatic habitats, it is essential that those areas adjacent to the waterways (riparian buffer zones) are managed in a manner which will reduce impacts on these habitats. These should be drawn up in consultation with NPWS and IFI.
W MM 2	Development that may result in significant negative impacts and disturbance for the internationally important number of Annex 1 bird species that use the site should be avoided.
W MM 3	Ongoing monitoring to assess the real environmental impact of any development on the water quality and fishery element of the estuarine ecosystem will be required for strategic development locations. This monitoring should be designed based on the assessment of potential effects and will depend on the scale and nature of the proposed development.
W MM 4	Development proposed in this plan will only take place where appropriate and sustainable waste water infrastructure is in place or can be up-graded to accommodate the scale of development which will secure the objectives of the Shannon River Basin Management Plan and the protection of Natura 2000 sites with water dependant habitats or species. This must be provided and be operational in advance of the commencement of any discharges from development. Waste water infrastructure must be capable of treating discharges to ensure that

	water quality in the receiving river (The main River Shannon and/or its tributaries) does not fall below legally required levels. Sustainable Urban Drainage Systems (SUDS) (where appropriate) will be required for all developments discharging within or upstream from Natura 2000 sites with water dependant habitats or species.
W MM 5	Councils should endeavour to carry out a review of existing licences/consents/permits operating around the Estuary.
Material Assets	
MA MM 1	Any development of strategic development locations will need to ensure sufficient assimilative capacity in the receiving water together with undertaking an assessment of the Assimilative Capacity of the receiving water in accepting future discharges. This should be undertaken in consultation with the Local Authority.
MA MM 2	Any future development will need to ensure a sufficient supply of freshwater or connection to a drinking water supply with sufficient capacity. Any future abstraction will need to ensure it complies with the requirements of the Water Framework Directive and takes into account ecological requirements of the associated waterbody.

Table 9.3 Over-arching mitigation measures arising from the SIFP AA

Number	Mitigation Measure
Biodiversity Flora and Fauna	
BFF MM32	At a project level it is not sufficient to defer the production of construction method statements these should be completed at the project design stage and subject to Habitats Directive Assessment.
BFF MM33	Requirements for consents and the design of project level mitigation for Strategic Development Locations should be covered in the overall assessment of the site.
BFF MM34	While Strategic Development Locations have been put forward should issues arise under Article 6(3) of the Habitats Directive at a project level they may require assessment. Should this assessment produce a finding of significant effects an alternative solution will be required.
BFF MM 35	In selecting the alternative solution it will be necessary to comply fully with Article 6(3) (and, if warranted, Article 6(4), including compensatory measures) of the Habitats Directive.
BFF MM36	Pre-construction surveys should be conducted by suitable qualified ecologists in areas of future development which require the loss of structures, trees or suitable feeding areas for nesting bird and bat species. Should any important species be found during the surveys the sequential approach of avoid, reduce or mitigate should be adopted to prevent significant effects.
BFF MM37	A “No net loss” principle for those habitats and species of conservation interest as identified through the conservation objectives should be adopted for the Lower Shannon Estuary ecosystem.
BFF MM38	The Steering Group structure established as part of the SIFP should continue to meet in order to facilitate dialogue between industrial operators and nature conservation bodies such as the NPWS and IFI.
BFF MM39	In relation to objective AV 1.5 any such development should ensure the protection of the structure and function of the Shannon Airport Coastal Lagoon as detailed and required by the conservation objectives for the Lower Shannon SAC qualifying interest feature 1150.
BFF MM40	At project level any proposed development within a Strategic Development Location or Area of Opportunity will need to consider impacts to the Qualifying Interest features of surrounding Natura 2000 sites within an appropriate buffer zone

	<p>and undertake as a minimum a Habitats Directive Assessment Screening Statement. This should include those Natura 2000 sites which were screened out of the SIFP where appropriate;</p> <ul style="list-style-type: none"> • Barrigone • Kerry Head Shoal • Askeaton Fen Complex • Loop Head SPA • Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA • Kerry Head SPA
Water Related Mitigation Measures	
W MM 28	To ensure the impacts from development/change in land use practices (including flood plain development) minimises interference with aquatic habitats, it is essential that those areas adjacent to the waterways (riparian buffer zones) are managed in a manner which will reduce impacts on these habitats. These should be drawn up in consultation with NPWS and IFI.
W MM 28	Consideration of issues that may result in increased nutrient loading into the water; increased human activity, traffic, lighting, disruption of hydrological regimes and disturbance in the immediate vicinity of an important bird feeding and roosting area will be necessary. Development that may result in significant negative impacts and disturbance for the internationally important number of Annex 1 bird species that use the site will not be allowed.
W MM 29	Ongoing monitoring to assess the real environmental impact of any development on the water quality and fishery element of the estuarine ecosystem will be required for Strategic Development Locations.
W MM 30	<p>Development proposed in this plan will only take place where appropriate and sustainable waste water infrastructure is in place or can be up-graded to accommodate the scale of development which will secure the objectives of the Shannon River Basin Management Plan and the protection of Natura 2000 sites with water dependant habitats or species. This must be provided and be operational in advance of the commencement of any discharges from development.</p> <p>Waste water infrastructure must be capable of treating discharges to ensure that water quality in the receiving river (The main River Shannon and/or its tributaries) does not fall below legally required levels. Sustainable Urban Drainage Systems (SUDS) will be required for all developments discharging within or upstream from Natura 2000 sites with water dependant habitats or species.</p>

9.3.1 Site-specific mitigation measures

A detailed assessment of the site-specific elements of Variation No. 3 to incorporate the SIFP into the 2011-2017 CDP was undertaken and mitigation measures recommended. The mitigation is summarised in Table 9.4, along with details of how this mitigation is incorporated into the County Development Plan 2017 - 2023. In many instances, the mitigation is already partially or fully provided for by other objectives and policies with the Clare County Development Plan 2017-2023. Where this is the case, these objectives are listed. In other instances, the recommended mitigation is provided for by the amendments, additions and deletions to the policies and objectives of the County Development Plan being recommended in this SEA Environmental Report and, where this is the case, details are also provided in **Table 9.4**.

Table 9.4 Site-specific mitigation measures and their incorporation into the County Development Plan

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
Inishmurry/Cahiracon SDL		
BFF	Any development is subject to site-specific assessment of potential impacts including, for example, HDA and EIA. These assessments should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes. The design and construction of development should maintain current habitat where possible and should also consider the creation of habitat suitable to the location and prevailing species. In particular, buffer zones should be established in relation to wet pedunculate oak-ash wood present at several locations within the site. Suitable protection measures should also be incorporated in relation to Bottlenose Dolphins, birds, otter, badger and bat species. Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; Objective CDP2.1 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of the Habitats Directive; Objective CDP14.17: Woodlands, Trees and Hedgerows make provision for the protection of trees; Objective CDP14.18: Grasslands makes provision for the protection of grassland Objective CDP14.4 makes provision for the protection of NHAs and pNHAs; Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; Objective CDP 14.1 makes provision to protect and enhance biodiversity; Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; Objective CDP14.4 requires the protection of natural heritage when considering certain developments; Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> The requirement to maintain current habitat, including the establishment of buffer zones around potentially valuable habitat, has been added to Objective CDP 11.5: Strategic Development Location – Inishmurry/Cahiracon to ensure that this mitigation measure is incorporated into the County Development

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		<p>Plan. This mitigation measure arose from the recommendation of the SEA undertaken at this site in July 2014 as part of the Variation process.</p> <ul style="list-style-type: none"> • The requirement to ensure that all NHAs and pNHAs are afforded appropriate protection has been added to Objective CDP 14.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	Any development is subject to site-specific assessment of potential impacts including, for example, EIA. Clare County Council must ensure that adequate waste water treatment, drinking water treatment, energy supplies and waste services are in place before development takes place to ensure that development does not impact on human health.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> • None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
W	Any development is subject to site-specific assessment of potential impacts including, for example, HDA and EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on WFD, MSFD and protected area water quality objectives. Any development is also subject to relevant licensing regimes. The objectives and requirements of the MSFD and the WFD (Shannon River Basin Management Plan) should be considered when assessing	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. • Objective CDP 9.1 relates to the Water Framework Directive. <p>Additional action taken to incorporate the recommended mitigation into the</p>

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	proposals for development. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD and MSFD water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>County Development Plan</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.2-11.15: Building on the Shannon Estuary as an Environmental Asset.
SG	To mitigate these potential impacts, any development is subject to site-specific assessment of potential impacts including, for example, EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on soils or geology. Construction and operational activities associated with development should apply best practice to minimise the risk of soil wash off, erosion and contamination.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP14.5 County Geological Site requires that the importance of County Geological Site is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
CA	To mitigate these potential impacts, any development is subject to site-specific assessment of potential impacts including, for example, EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on air quality and would not be an impediment to the achievement of greenhouse gas emission targets. Development is subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive, Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objective CDP15.2: Protected Structures requires the protection of structures in the Record of protected structures; • Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; • Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; • Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> • None required, the EIA process will kick-in as proposals for development arise and appropriate assessment will ensure that any impacts are identified and mitigated for.
LS	Any development is subject to site-specific assessment including, for example, EIA. This should include all relevant survey and assessment work including Landscape Character Assessment. Any development should be designed to minimise	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objective CDP13.1: Landscape Character Assessment encourages the utilisation of the Landscape Character Assessment of County Clare.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	visual impacts.	<ul style="list-style-type: none"> Objective CDP13.5 Heritage Landscapes requires that all proposed developments in Heritage Landscapes demonstrate that every effort has been made to reduce visual impact; Objective CDP13.7 Scenic Routes provides for protection of sensitive areas from inappropriate development; <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
RES	Clare County Council shall consider the Clare County Renewable Energy Strategy (Volume 8 of the Clare County Development Plan 2011-2017 (as varied)) when considering energy needs, strategic development and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The Clare County Renewable Energy Strategy is incorporated into the development plan at Volume 8. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> None required.
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan.</p> <ul style="list-style-type: none"> None required.
MA	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	Additional action taken to incorporate the recommended mitigation into the County Development Plan: <ul style="list-style-type: none"> • None required
F	Clare County Council shall consider the OPW's Flood Risk Management Guidance for Planning Authorities, and the flood risk and hazard mapping and Flood Risk Management Plans (when available) from the Shannon CFRAM Studies, when considering strategic development needs and planning applications at this site. Any development should incorporate best practice for flood risk management and drainage into the design.	The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation: <ul style="list-style-type: none"> • Objective CDP15.9 Strategic Flood Risk Assessment ensures that the OPW's Flood Risk Management Guidance for Planning Authorities are considered in relation to development; Additional action taken to incorporate the recommended mitigation into the County Development Plan: <ul style="list-style-type: none"> • It has been recommended that reference to the fact that all proposed developments should be in accordance with the requirements of the Floods Directive has been added to the majority of the objectives and policies within Chapter 11. • It has been recommended that a requirement that development provides no impediment to the achievement of the objectives outline in the upcoming Flood Risk management Plans be included in Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
Moneypoint SDL		
BFF	Any development is subject to site-specific assessment of potential impacts including, for example, HDA and EIA. These assessments should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes. The design and construction of development should maintain current habitat where possible and should also consider the creation of habitat suitable to the location and prevailing species. In particular, buffer zones should be established in relation to wet pedunculate oak-ash wood present at several	The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation: <ul style="list-style-type: none"> • Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; • Objective CDP2.1 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of Habitats Directive; • Objective CDP14.17: Woodlands, Trees and Hedgerows make provision for the protection of trees;

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	locations within the site. Suitable protection measures should also be incorporated in relation to Bottlenose Dolphins, birds, otter, badger and bat species. Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.	<ul style="list-style-type: none"> • Objective CDP14.18: Grasslands makes provision for the protection of grassland • Objective CDP14.4 makes provision for the protection of NHAs and pNHAs; • Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; • Objective CDP 14.1 makes provision to protect and enhance biodiversity; • Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; • Objective CDP14.4 requires the protection of natural heritage when considering certain developments; • Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • The requirement to maintain current habitat, including the establishment of buffer zones around potentially valuable habitat, has been added to Objective CDP 11.6: Strategic Development Location – Moneypoint to ensure that this mitigation measure is incorporated into the County Development Plan. This mitigation measure arose from the recommendation of the PEA undertaken at this site in July 2014 (see Appendix B). • The requirement to ensure that all NHAs and pNHAs are afforded appropriate protection has been added to Objective CDP 14.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	Any development is subject to site-specific assessment of potential impacts including, for example, EIA. Clare County Council must ensure that adequate waste water treatment,	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	drinking water treatment, energy supplies and waste services are in place before development takes place to ensure that development does not impact on human health.	<p>ensuring adequate water and waste water services.</p> <ul style="list-style-type: none"> Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
W	Any development is subject to site-specific assessment of potential impacts including, for example, HDA and EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on WFD, MSFD and protected area water quality objectives. Any development is also subject to relevant licensing regimes. The objectives and requirements of the MSFD and the WFD (Shannon River Basin Management Plan) should be considered when assessing proposals for development. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD and MSFD water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.3 & 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts including, for example, EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on soils or geology. Construction and operational activities associated with development should apply best practice to minimise the risk of	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP14.5 County Geological Site requires that the importance of County Geological Site is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p>

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	soil wash-off, erosion and contamination.	<ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
CA	Any development is subject to site-specific assessment of potential impacts including, for example, EIA. These assessments should include all relevant survey and modelling work to demonstrate that the development's design, construction and operation will not impact on air quality and would not be an impediment to the achievement of greenhouse gas emission targets. Development is subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive,	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP;

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted.	<ul style="list-style-type: none"> Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and appropriate assessment will ensure that any impacts are identified and mitigated for.
LS	Any development is subject to site-specific assessment including, for example, EIA. This should include all relevant survey and assessment work including Landscape Character Assessment. Any development should be designed to minimise visual impacts.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP13.1: Landscape Character Assessment encourages the utilisation of the Landscape Character Assessment of County Clare. Objective CDP13.5 Heritage Landscapes requires that all proposed developments in Heritage Landscapes demonstrate that every effort has been made to reduce visual impact; Objective CDP15.7 Scenic Routes provides for protection of sensitive areas from inappropriate development; <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required, the EIA process will kick-in as proposals for development arise and will ensure that any impacts are identified and mitigated for.
RES	Clare County Council shall consider the Clare County Renewable Energy Strategy (Volume 8 of the Clare County Development Plan 2011-2017 (as varied)) when considering energy needs, strategic development and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The Clare County Renewable Energy Strategy is incorporated into the development plan at Volume 6. <p>Additional action taken to incorporate the recommended mitigation into the</p>

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		County Development Plan: <ul style="list-style-type: none"> None required.
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation: <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. Additional action taken to incorporate the recommended mitigation into the County Development Plan: <ul style="list-style-type: none"> None required.
MA	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation: <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. Additional action taken to incorporate the recommended mitigation into the County Development Plan: <ul style="list-style-type: none"> None required.
F	Clare County Council shall consider the OPW's Flood Risk Management Guidance for Planning Authorities, and the flood risk and hazard mapping and Flood Risk Management Plans (when available) from the Shannon CFRAM Studies, when considering strategic development needs and planning applications at this site. Any development should incorporate best practice for flood risk management and drainage into the design.	The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation: <ul style="list-style-type: none"> Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. Additional action taken to incorporate the recommended mitigation into the County Development Plan: <ul style="list-style-type: none"> It has been recommended that reference to the fact that all proposed developments should be in accordance with the requirements of the Floods Directive has been added to the majority of the objectives and policies within Chapter 11.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		<ul style="list-style-type: none"> It has been recommended that a requirement that development provides no impediment to the achievement of the objectives outline in the upcoming Flood Risk management Plans be included in Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
Poulnasherry Bay Area of Opportunity		
BFF	<p>To mitigate these potential impacts, any development is subject to site-specific assessment of potential impacts including, for example, HDA and EIA. These assessments should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes.</p> <p>A programme for the Appropriate Assessment of all aquaculture licences and inshore fishing activities in and adjacent to Natura 2000 sites in Ireland has been undertaken. Baseline data to inform these assessments and assist with the development of conservation objectives for the sites has been collected under the supervision of the Marine Institute. Bord lascaigh Mhara carried out aquaculture profiling and developed Fisheries Natura Plans in this regard, Any future development of the aquaculture industry at this location will need to take into consideration the findings of this work for this site.</p> <p>The Marine Institute carried out an investigation into the effects of inter-tidal Oyster culture on the spatial distribution of waterbirds which included Poulnasherry Bay. Oyster husbandry activity was observed during all three of the four counts at Poulnasherry Bay. Minor impacts, involving birds being disturbed by husbandry activity, but not being displaced, was observed on two counts at Poulnasherry Bay, This</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; Objective CDP17.28 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of the Habitats Directive; Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; Objective CDP 14.1 makes provision to protect and enhance biodiversity; Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; Objective CDP14.4 requires the protection of natural heritage when considering certain developments; Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirement to protect and enhance biodiversity has been added to

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	<p>disturbance effect would need to be investigated further at a project level should future applications be required for aquaculture within this site and would need to consider the in-combination and cumulative effect with current licences within the area.</p> <p>This location contains a shore fishing spot and bait location point as per the Shannon River Basin District guide to shore angling. Any proposed developments should take cognisance of these existing activities.</p> <p>Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.</p>	<p>Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.</p> <ul style="list-style-type: none"> The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 14.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	<p>Any proposal for commercial fishing and aquaculture is subject to the relevant licensing regimes. The objectives and requirements for water body status outlined in the Shannon River Basin Management Plan and the West Shannon Poulmasherry Shellfish Pollution Reduction Programme should be considered when assessing proposals for commercial fishing and aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial development etc.</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		11.14: Building on the Shannon Estuary as an Environmental Asset.
W	To mitigate these potential impacts, any proposal for commercial fishing and aquaculture activity is subject to relevant licensing regimes and site-specific assessments. The objectives and requirements of the MSFD, The WFD (Shannon River Basin Management Plan) and the Shellfish Directive (West Shannon Poulfnasherry Shellfish Pollution Reduction Programme) should be considered when assessing proposals for commercial fishing or aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial activity etc. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD, MSFD and shellfish water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts and to relevant licensing regimes. This should include all relevant survey work and assessment work. The number and proximity of the licenced sites will need to be considered together in terms of in-combination effects.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP14.5 County Geological Site requires that the importance of County Geological Site is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
CA	To mitigate potential impacts, any development is subject to site-specific assessment of potential impacts. This should	The following objectives in the Clare County Development Plan 2017-2023 already

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	include all relevant survey work and assessment work. Emissions to air are subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	<p>provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments/activities with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive, Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted. Any activity is also subject to relevant licensing regimes.	
LS	None required	-
RES	None required	-
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required
MA	None required	-
F	None required	-
Carrigaholt Area of Opportunity		
BFF	<p>Any development is subject to site-specific assessment of potential impacts, including relevant survey information such as dedicated bird counts throughout the summer and winter months to establish bird use. These should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes.</p> <p>A programme for the Appropriate Assessment of all</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; Objective CDP17.28 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of the Habitats Directive;

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	<p>aquaculture licences and inshore fishing activities in and adjacent to Natura 2000 sites in Ireland has been undertaken. Baseline data to inform these assessments and assist with the development of conservation objectives for the sites has been collected under the supervision of the Marine Institute. Bord lascaigh Mhara carried out aquaculture profiling and developed Fisheries Natura Plans in this regard, Any future development of the aquaculture industry at this location will need to take into consideration the findings of this work for this site.</p> <p>This area also contains a shore mark and bait location point as per the Shannon River Basin District guide to shore angling. Any proposed developments should take cognisance of these existing activities.</p> <p>Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.</p>	<ul style="list-style-type: none"> • Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; • Objective CDP 14.1 makes provision to protect and enhance biodiversity; • Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; • Objective CDP14.4 requires the protection of natural heritage when considering certain developments; • Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	Any proposal for commercial fishing and aquaculture is subject to the relevant licensing regimes. The objectives and requirements for water body status outlined in the Shannon River Basin Management Plan and the West Shannon Carrigaholt Shellfish Pollution Reduction Programme should be considered when assessing proposals for commercial fishing and aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. • Objective CDP 9.1 relates to the Water Framework Directive. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial development etc.	<p>sector</p> <ul style="list-style-type: none"> Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
W	Any proposal for commercial fishing and aquaculture activity is subject to relevant licensing regimes and site-specific assessments. The objectives and requirements of the MSFD, The WFD (Shannon River Basin Management Plan) and the Shellfish Directive (West Shannon Carrigaholt Shellfish Pollution Reduction Programme) should be considered when assessing proposals for commercial fishing or aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial activity etc. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD, MSFD and shellfish water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts and to relevant licensing regimes. This should include all relevant survey work and assessment work.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP14.5 County Geological Site requires that the importance of

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Impacts to the geological heritage site should be through avoidance through appropriate siting and operation of activities. The number and proximity of the licenced sites will need to be considered together with the in-combination effects.	<p>County Geological Site is recognised and the character and integrity of these sites is protected.</p> <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan</p> <ul style="list-style-type: none"> • None required as current licensing and assessment regimes will kick in.
CA	Any development is subject to site-specific assessment of potential impacts. This should include all relevant survey work and assessment work. Emissions to air are subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • None required as current licensing and assessment regimes will kick in.
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments/activities with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive,	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; • Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; • Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; • Objective 15.13: Underwater Archaeology requires the protection and

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted. Any activity is also subject to relevant licensing regimes.	<p>preservation of underwater archaeological sites.</p> <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
LS	None required	-
RES	None required	-
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required
MA	None required	-
F	None required	-
Rinevella Bay Area of opportunity		

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
BFF	<p>Any development is subject to site-specific assessment of potential impacts, including relevant survey information such as dedicated bird counts throughout the summer and winter months to establish bird use; and assessment to impacts, if any, to Atlantic Salt Marsh (a priority habitat) in the vicinity. The main areas containing this habitat are located to the east surrounding Cloonconeene point which is outside of the current licenced areas. These should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes.</p> <p>A programme for the Appropriate Assessment of all aquaculture licences and inshore fishing activities in and adjacent to Natura 2000 sites in Ireland has been undertaken. Baseline data to inform these assessments and assist with the development of conservation objectives for the sites has been collected under the supervision of the Marine Institute. Bord Iascaigh Mhara carried out aquaculture profiling and developed Fisheries Natura Plans in this regard, Any future development of the aquaculture industry at this location will need to take into consideration the findings of this work for this site.</p> <p>Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; • Objective CDP2.1 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of Habitats Directive; • Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; • Objective CDP 14.1 makes provision to protect and enhance biodiversity; • Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; • Objective CDP14.4 requires the protection of natural heritage when considering certain developments; • Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. • The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
PHH	Any proposal for commercial fishing and aquaculture is subject to the relevant licensing regimes. The objectives and requirements for water body status outlined in the Shannon River Basin Management Plan and the West Shannon Rinevella Shellfish Pollution Reduction Programme should be considered when assessing proposals for commercial fishing and aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial development etc.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. • Objective CDP 9.1 relates to the Water Framework Directive. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
W	To mitigate these potential impacts, any proposal for commercial fishing and aquaculture activity is subject to relevant licensing regimes and site-specific assessments. The objectives and requirements of the MSFD, The WFD (Shannon River Basin Management Plan) and the Shelfish Directive (West Shannon Rinevella Shellfish Pollution Reduction Programme) should be considered when assessing proposals for commercial fishing or aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial activity etc. The design and	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. • Objective CDP 9.1 relates to the Water Framework Directive. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	construction of development should aim to protect water quality and provide no impediment to the achievement of WFD, MSFD and shellfish water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts and to relevant licensing regimes. This should include all relevant survey work and assessment work. The number and proximity of the licenced sites will need to be considered together in terms of in-combination effects.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP 14.5 County Geological Sites requires that the importance of County Geological Sites is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
CA	Any development is subject to site-specific assessment of potential impacts. This should include all relevant survey work and assessment work. Emissions to air are subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments/activities with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive, Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted. Any activity is also subject to relevant licensing regimes.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
LS	None required	-
RES	None required	-
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 8. <p>Additional action taken to incorporate the recommended mitigation into the</p>

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	development needs and planning applications at this site.	County Development Plan: <ul style="list-style-type: none"> • None required
MA	None required	-
F	None required	-
Killimer Area of opportunity		
BFF	<p>Any development is subject to site-specific assessment of potential impacts, including relevant survey information such as dedicated bird counts throughout the summer and winter months to establish bird use. Any development is also subject to relevant licensing regimes.</p> <p>A programme for the Appropriate Assessment of all aquaculture licences and inshore fishing activities in and adjacent to Natura 2000 sites in Ireland has been undertaken. Baseline data to inform these assessments and assist with the development of conservation objectives for the sites has been collected under the supervision of the Marine Institute. Bord lascaigh Mhara carried out aquaculture profiling and developed Fisheries Natura Plans in this regard, Any future development of the aquaculture industry at this location will need to take into consideration the findings of this work for this site.</p> <p>Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; • Objective CDP2.1 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of Habitats Directive; • Objective CDP14.7 makes provision for the protection of non-designated sites of potential conservation value; • Objective CDP 14.1 makes provision to protect and enhance biodiversity; • Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; • Objective CDP14.4 requires the protection of natural heritage when considering certain developments; • Objective CDP2.1 requires that development does not lead to excessive disturbance to wildlife in ecologically protected areas. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the</p>

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		<p>County Development Plan:</p> <ul style="list-style-type: none"> The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	Any proposal for commercial fishing and aquaculture is subject to the relevant licensing regimes. The objectives and requirements for water body status outlined in the Shannon River Basin Management Plan should be considered when assessing proposals for commercial fishing and aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial development etc.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
W	Any proposal for commercial fishing and aquaculture activity is subject to relevant licensing regimes and site-specific assessments. The objectives and requirements of the MSFD, The WFD (Shannon River Basin Management Plan) and the Shellfish Directive should be considered when assessing	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	proposals for commercial fishing or aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial activity etc. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD, MSFD and shellfish water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>lead to pollution of air and water specifically relating to the SIFP.</p> <ul style="list-style-type: none"> Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts and to relevant licensing regimes. This should include all relevant survey work and assessment work. The number and proximity of the licenced sites will need to be considered together in terms of in-combination effects.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective CDP14.5 County Geological Sites requires that the importance of County Geological Sites is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
CA	Any development is subject to site-specific assessment of potential impacts. This should include all relevant survey work and assessment work. Emissions to air are subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments/activities with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive, Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted. Any activity is also subject to relevant licensing regimes.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
LS	None required	-

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
RES	None required	-
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • The SIFP for the Shannon Estuary will be incorporated into the development plan at Volume 7. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • None required
MA	None required	-
F	None required	-
Clonderalaw Bay Area of Opportunity		
BFF	<p>Any development is subject to site-specific assessment of potential impacts, including relevant survey information such as dedicated bird counts throughout the summer and winter months to establish bird use. These should include all relevant ecological survey work. Any development is also subject to relevant licensing regimes.</p> <p>A programme for the Appropriate Assessment of all aquaculture licences and inshore fishing activities in and adjacent to Natura 2000 sites in Ireland has been undertaken. Baseline data to inform these assessments and assist with the development of conservation objectives for the sites has been collected under the supervision of the Marine Institute. Bord Iascaigh Mhara carried out aquaculture profiling and developed Fisheries Natura Plans in this regard, Any future</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objectives CDP 2.1, 14.2 and 14.3 within the Clare County Development Plan 2017-2023 require project-specific screening for appropriate assessment and if directed by the Competent Authority must furnish an NIS to the authority; • Objective CDP2.1 requires that all plans and programmes comply with the requirements of SEA and all plans and projects comply with the requirements of Habitats Directive; • Objective CDP 14.7 makes provision for the protection of non-designated sites of potential conservation value; • Objective CDP 14.1 makes provision to protect and enhance biodiversity; • Objective CDP14.26 makes provision to take all necessary steps to prevent the spread of invasive species; • Objective CDP14.4 requires the protection of natural heritage when considering certain developments; • Objective CDP2.1 requires that development does not lead to excessive

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	<p>development of the aquaculture industry at this location will need to take into consideration the findings of this work for this site.</p> <p>This area also contains a shore fishing spot as per the Shannon River Basin District guide to shore angling. Any proposed developments within the strategic location should take cognisance of this.</p> <p>Operational and maintenance activities should be designed so as to minimise impact on biodiversity, flora and fauna.</p>	<p>disturbance to wildlife in ecologically protected areas.</p> <ul style="list-style-type: none"> Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirement to protect and enhance biodiversity has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset. The requirement to support measures to control and manage invasive alien species has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
PHH	<p>Any proposal for commercial fishing and aquaculture is subject to the relevant licensing regimes. The objectives and requirements for water body status outlined in the Shannon River Basin Management Plan should be considered when assessing proposals for commercial fishing and aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial development etc.</p>	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. Objective CDP 9.1 relates to the Water Framework Directive. Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> The requirements to ensure that development provides no impediment to the

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
		achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
W	Any proposal for commercial fishing and aquaculture activity is subject to relevant licensing regimes and site-specific assessments. The objectives and requirements of the MSFD and the WFD (Shannon River Basin Management Plan) should be considered when assessing proposals for commercial fishing or aquaculture licences in these areas. Clare County Council shall consider the potential effects on this area when assessing proposals for potentially polluting point and diffuse sources such as waste water treatment plants, on-site waste water treatment plants, industrial activity etc. The design and construction of development should aim to protect water quality and provide no impediment to the achievement of WFD, MSFD and shellfish water quality objectives. Operational activities should be designed and carried out so as to not impact on water body status.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Chapter 8: Physical Infrastructure includes a range of objectives aimed at ensuring adequate water and waste water services. • Chapter 11: Objectives 11.3 & 11.4 aim to ensure that developments do not lead to pollution of air and water specifically relating to the SIFP. • Objective CDP 9.1 relates to the Water Framework Directive. • Objective CDP12.10: Commercial Fishing and Aquaculture requires the support and protection of identified shellfish areas as an economic and employment sector • Objective CDP 12.9: Shellfish Waters Directive supports the proper and successful implementation of the Shellfish Waters Directive along the County Clare coastline. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • The requirements to ensure that development provides no impediment to the achievement of WFD and MSFD objectives has been added to Objective CDP 11.14: Building on the Shannon Estuary as an Environmental Asset.
SG	Any development is subject to site-specific assessment of potential impacts and to relevant licensing regimes. This should include all relevant survey work and assessment work. The number and proximity of the licenced sites will need to be considered together in terms of in-combination effects.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> • Objective CDP 14.5 County Geological Sites requires that the importance of County Geological Sites is recognised and the character and integrity of these sites is protected. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> • None required as current licensing and assessment regimes will kick in.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
CA	Any development is subject to site-specific assessment of potential impacts. This should include all relevant survey work and assessment work. Emissions to air are subject to licensing regimes which should reflect the requirements and targets of the Air Quality Framework Directive and the National Climate Change Strategy. The requirements of the International regulations introduced to reduce emissions (including air emissions) should be considered. These include the International Maritime Organisation's (IMO) International Convention on the Prevention of Pollution from Ships (MARPOL) and the European Commission's EU Shipping Strategy. The Annex VI regulations and the amendments contained in the Sea Pollution Miscellaneous Pollution Act, 2006, should also be adhered to.	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 18.1 Climate Change requires consideration of the Limerick Clare Climate Change Strategy 2006 and any updated versions. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.
CH	Any development is subject to site-specific assessment including, for example, EIA. Any assessment shall include detailed impact statements that look at proposed developments/activities with regard to known or potential impacts, including visual impacts, on recorded or previously unrecorded/potential archaeology, both terrestrial and underwater. Available data pertaining to the cultural heritage should be consulted and reviewed, including the Shipwreck Inventory of Ireland, Ports and Harbours Archive, Topographical Files in the National Museum, cartographic sources, historical sources, results of previous surveys carried out in the area (geophysical/EIS/marine, etc.) and results of archaeological research and excavations. The Register of Monuments and Places (RMP), Topographical Files of the National Museum and the UNESCO Convention on the	<p>The following objectives in the Clare County Development Plan 2017-2023 already provide for aspects of the recommended mitigation:</p> <ul style="list-style-type: none"> Objective 15.2: Protected Structures requires the protection of structures in the Record of protected structures; Objective CDP 15.8: Sites, Features and Objects of Archaeological Interest requires the protection of such features; Objective 15.9: Newly Discovered Archaeological Sites requires the protection and preservation of archaeological sites discovered since the publication of the RMP; Objective 15.13: Underwater Archaeology requires the protection and preservation of underwater archaeological sites. <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required as current licensing and assessment regimes will kick in.

Measure Type	Recommended mitigation	Incorporation of mitigation into the Clare County Development Plan 2017-2023
	Protection of the Underwater Cultural Heritage (including the Annex) should be consulted. DAHG guidelines on assessing the potential for impact to underwater archaeology should be consulted. Any activity is also subject to relevant licensing regimes.	
LS	None required	-
RES	None required	-
SIFP	Clare County Council shall consider the objectives of the Shannon Integrated Framework Plan (SIFP) for the Shannon Estuary (which will be adopted as Volume 9 of the Clare County Development Plan 2011-2017 (as varied)), and the objectives of chapter 14 of the Clare County Development Plan 2011-2017 (as varied), when considering strategic development needs and planning applications at this site.	<ul style="list-style-type: none"> The SIFP for the Shannon Estuary has been incorporated into the development plan at Volume 7 and through the inclusion of specific objectives in Chapter 11 The Shannon Estuary <p>Additional action taken to incorporate the recommended mitigation into the County Development Plan:</p> <ul style="list-style-type: none"> None required.
MA	None required	-
F	None required	-

9.4 Mitigation Measures associated with Volume 5 – WES

The Clare Wind Energy Strategy forms part of the Clare County Development Plan 2017-2023. In accordance with the requirements of the Department of Environment, Community and Local Government as set out in Circular PL20-13, the previous “Clare Wind Energy Strategy 2011-2017” has not been reviewed as part of the preparation of this Plan. Circular PL20-13, dated 20th December 2013, states that in the cyclical review of a Development Plan it is advised that, until the national policy review processes have concluded in relation to the Wind Energy Development Guidelines and the Renewable energy Export Policy and Development Framework, local authorities should defer amending their existing Development Plan policies and should instead operate their existing Development Plan policies and objectives until the completion of these processes and further advice is issued.

The Wind Energy Strategy within the Clare County Development Plan (CDP) 2017-2023 was adopted following Strategic Environmental Assessment and Habitat Directive Assessments. Within the Wind Energy Strategy four classifications were developed for Wind Farm development in County Clare, which are as follows:

- Strategic Areas - key areas are considered to be eminently suitable for wind farm development
- Acceptable in Principle - these areas are considered suitable for wind farm development
- Open to Consideration – Wind energy applications in these areas will be evaluated on a caseby- case basis subject to certain criteria.
- Not normally permissible - These areas are not in principle considered suitable for wind farm Development

Figure 9.1 provides an overview of the strategic windfarm development areas and it outlines that there are some pNHAs and NHAs that fall within the, Strategic Areas, Acceptable in Principle and Open for Consideration categories.

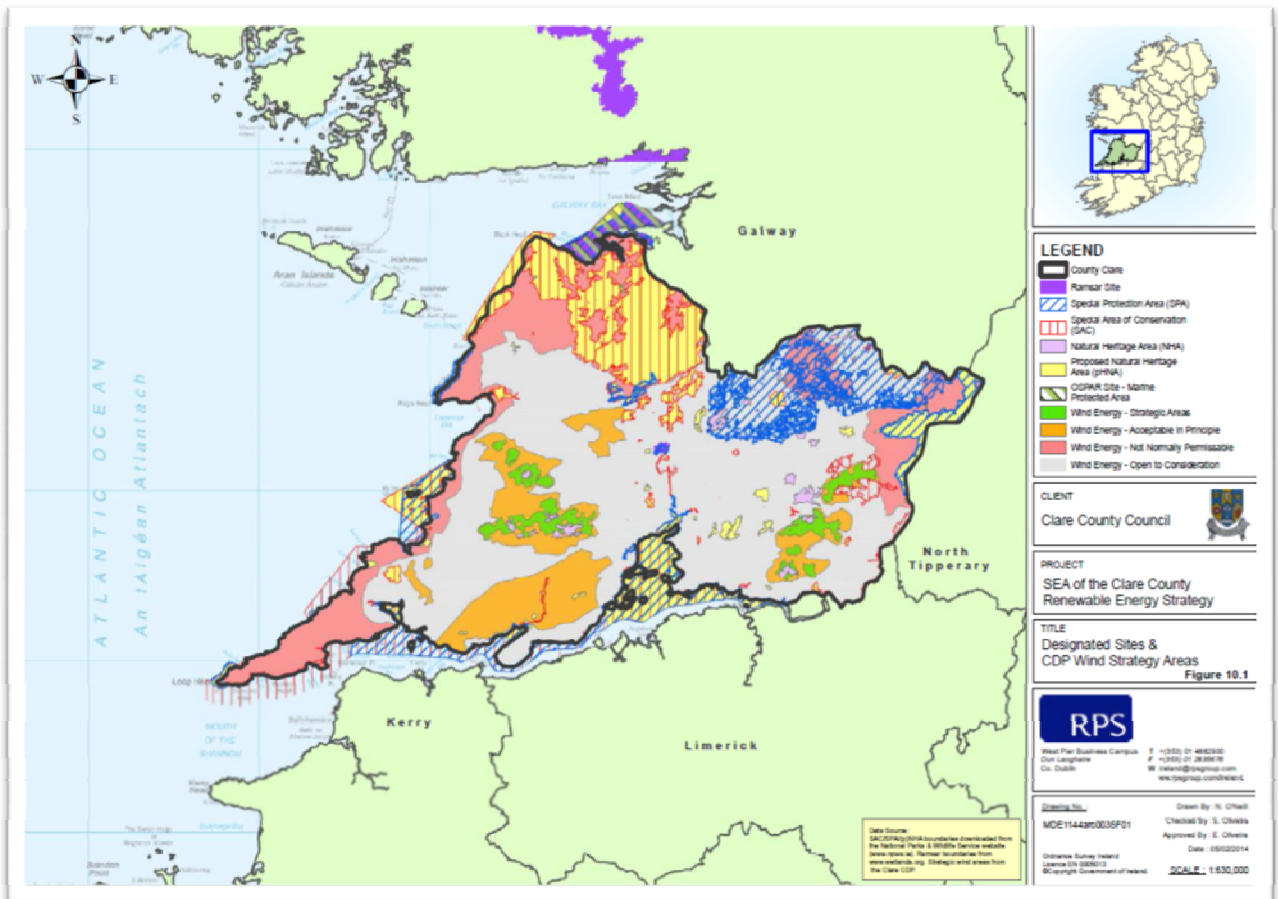


Figure 9.1 pNHAs and NHAs in conjunction with wind classification

(Source; SEA of the Clare Renewable Energy Strategy)

The Wildlife (Amendment) Act, 2000 provides the legal basis for the establishment of a national network of sites known as Natural Heritage Areas (NHAs). NHAs aim to conserve and protect nationally important plant and animal species and their habitats. NHAs are also designated to conserve and protect nationally important landforms, geological or geomorphological features. Planning authorities are obliged by law to ensure that these sites are protected and conserved.

The national designation for wildlife and nature conservation is the Natural Heritage Area (NHA), and designated established Natural Heritage Areas and proposed Natural Heritage Areas (pNHA) are protected under the Wildlife (Amendment) Acts, 1976-2000. These areas are considered important for the habitats present or hold species of plants and animals whose habitat need protection under national legislation. NHAs and proposed NHAs may also be regarded as stepping stones or ecological corridors in the context of Article 10 of the EU Habitats Directive. A number of NHAs fall within the categories; 'strategic areas' and/or areas 'acceptable in principle' for wind energy development.

These NHAs include:

Lough Naminna Bog (site code 2367);

Slieve Callan Bog NHA (site code 2397);

Cragnashingaun Bogs NHA (site code 2400);

Lough Acrow Bogs NHA (site code 2421);

Gortacullin Bog NHA (site code 2401);

Woodcock Hill Bog NHA (site code 2402); and

Doon Lough NHA (site code 337).

These sites have been selected for the conservation of peatland habitats and wind energy developments could pose a threat to the integrity of these NHAs. As such Clare County Council as part of the Variation process and through the preparation of the Clare County Development Plan 2017-2023 have proposed the following objectives in relation to protection and conservation of NHAs specifically relating to Wind Energy.

- *Any planning application for wind energy development within County Clare will ensure that the development proposal in the vicinity of or affecting in any way an NHA or pNHA provides sufficient information showing how its proposals will impact on the designated site (through an assessment of effects on their Features of Interest) and how any such impact will be appropriately mitigated.*
- *Any planning application for wind energy development within County Clare will ensure that all NHAs and pNHAs are afforded the appropriate level of protection by only permitting development demonstrated not to have a significant adverse effect on the conservation value of such areas or where such development is shown to have a significant adverse effect, the said development is exceptional by virtue of its regional or national significance.*

In addition to this, internal procedures in Clare County Council at the development management level provide for an added level of protection where the Strategy may be lacking, and areas identified as ‘acceptable in principle’ undergo a thorough and detailed assessment process.

County Development Plan Objective 8.38 will ensure the proper implementation of the WES throughout the lifetime of the plan and that all proposals are considered and implemented having full regard to the requirements of the Habitats Directive. There are also a number of County Development Plan objectives that ensure an overarching protection to the European Sites within County Clare. Objectives 12.1, 14.2, 14.3 ensure that any development in the County will be subject to the requirements of the Habitats Directive. CDP Objective 14.2 recognises and affords protection to any new/modified SACs and SPAs throughout the lifetime of the plan, and CDP objective 14.7 ensures the protection and conservation of ecological networks which may support the maintenance of the Natura 200 network. The SEAI, in September 2015, have launched new versions of the SEAI renewable energy resource atlases which can be accessed through the following links:

- The SEAI Wind Atlas: <http://maps.seai.ie/wind>
- The SEAI Bioenergy Resource Atlas: <http://maps.seai.ie/bioenergy>
- The SEAI Geothermal Resource Atlas: <http://maps.seai.ie/geothermal>

This remodelled Wind Atlas will be utilised in any future revision or up-date to the Wind Energy Strategy. In addition the Bioenergy and Geothermal Resource Atlases will be used to inform any future update to the Clare Renewable Energy Strategy.

9.5 Mitigation Measures associated with Volume 6 – RES

The Clare County Renewable Energy Strategy 2014-2020 outlines the renewable energy resource that is deliverable in County Clare. Its vision, consistent with that of the Clare County Development Plan 2017-2023, is to position the County as the national leader in renewable energy generation, supporting energy efficiency and conservation, with an accessible modern telecommunications infrastructure, achieving balanced social and economic development and assisting Ireland's Green Energy target.

It indicates that that a sustainable balance of renewable energy resources is planned, ensuring that there is no over reliance or over concentration on any single technology.

This Strategy outlines the potential for a range of renewable resources, including bioenergy and anaerobic digestion, micro renewables, geothermal, solar, hydro, energy storage, onshore and offshore wind, wave and tidal energy. It acknowledges the significant contribution they can make to County Clare being more energy secure, less reliant on traditional fossil fuels, enabling future energy export and meeting assigned targets. The targets above do not include energy storage technologies in keeping with the methodology set out in the National Renewable Energy Action Plan.

The Clare County Renewable Energy Strategy also recognises the importance of the excellent infrastructure in County Clare including road, electricity, gas and broadband network, airport, ports and the Shannon Estuary, both in supporting the development of renewables and enabling a competitive supply chain economy. The targets above are supported by a suite of objectives which seek to give certainty to potential investors and developers of renewable energy in the County. Underlying the Renewable Energy Strategy is the need to increase energy efficiency and conservation and to promote the development of micro renewable technologies. An aim of the Renewable Energy Strategy is to raise awareness of micro technologies and their advantages, together with the benefits of being more energy efficient. This Strategy recognises the importance of not only generating and supplying energy in the County by renewable means, but balancing this with more energy efficient practices.

In incorporating the Renewable Energy Strategy the County Development Plan contains a number of protection objectives which will ensure no significant effects arising from the implementation of the strategy. In particular objective 8.38(g) which states;

To ensure that all proposals for wind energy, renewable energy and ancillary facilities in the County are in full compliance with the requirements of the SEA and Habitats Directives.

In addition, the following mitigation measures have been included within the Renewable Energy strategy as supporting text underneath the relevant objectives or within the relevant chapter and should be strictly adhered to in regards to any future renewable energy development.

Table 9.5 Mitigation Measures specific to the Renewable Energy Strategy

Mitigation
The overarching policies and objectives of the Clare County Development Plan 2017-2023 shall equally apply to any development and any associated works, individually or in combination with other plans or projects within County Clare.
All renewable energy developments within County Clare shall comply with the requirements of the Habitats Directive, Marine Strategy and Water Framework Directives and all other relevant EU Directives.
General Environmental Policies
Any Renewable Energy Development shall protect habitats which, by virtue of their linear and continuous structure (e.g. rivers and their banks) are essential for the migration, dispersal and genetic exchange of wild species.
Renewable Energy Developments within County Clare will support the National Parks and Wildlife Service (NPWS) and Department of Arts, Heritage and the Gaeltacht (DAHG) in the maintenance and, as appropriate, the achievement of favourable conservation status for the habitats and species to which the EU Habitats Directive applies
To consult with the National Parks and Wildlife Service (NPWS) when undertaking or determining applications for development which is likely to affect plant, animal or bird species protected by law. In the event of a proposed renewable energy development impacting on a site known or likely to be a breeding or resting site of species listed in Habitats Regulations a derogation licence, issued by the Department of Arts, Heritage and the Gaeltacht may be required in advance of a permission.
To ensure that all renewable energy developments control and manage alien/ invasive species.
To assess all planning applications for renewable energy developments to ensure they have no adverse impact on existing ground water protection schemes, groundwater source protection zones, and all drinking water extraction points and supplies.
That Clare County Council will ensure the monitoring and control of EIA sub-threshold development within the County through the document <i>Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding sub-threshold development (DEHLG, 2003)</i> or any updated document with specific reference to the requirement for screening for appropriate assessment.
To safeguard the conservation value of NHA's and pNHA's, statutory Nature Reserves and refuges for Fauna and Annex I habitats in accordance with the provisions of national legislation.
Bio-energy targets
Planning applications for biomass crops such as willow or miscanthus will consider potential environmental effects in relation to land use changes and in particular will assess potential effects on Natura 2000 sites, NHAs and pNHAs.
Sustainable best practice in the growing of biomass and in the associated forestry management shall be required.
The planning of biomass will be in accordance with the following guidance: Miscanthus Best Practice Guidelines, Teagasc and Agric Food and Biosciences Institute (April 2011); and Short Rotation Coppice Willow Best Practice Guidelines, Teagasc and Agric Food and Biosciences Institute (April 2011).
Combined heat and power
The Planning Department assessing applications for CHP Plants should consider requesting traffic management plans.

Onshore Wind
Any planning application for wind energy development within County Clare shall ensure that the development proposal in the vicinity of or potentially affecting in any way an NHA or pNHA provides sufficient information showing how it potentially would impact on the designated site (through an assessment of effects on their Features of Interest) and how any such potential impact will be appropriately mitigated.
Any planning application for wind energy development within County Clare shall ensure that all NHAs and pNHAs are afforded the appropriate level of protection by only permitting development demonstrated not to have a significant adverse effect on the conservation value of such areas.
Marine Energy Service and Port Infrastructure
It is recommended that a feasibility study be undertaken in relation to any new port development and this study would outline all of the potential environmental issues associated with port development at the identified sites.
Facilitating Micro Hydro Power
An Ecological Impact Assessment should identify all ecological factors, including ecological corridors, be accompanied by appropriate surveys, undertaken at the correct time of year and be undertaken by a suitably qualified and experienced ecologists. Details of the habitats impacted by the MHP will be required, including descriptions of protected species recorded and mapping of habitat locations and extents. The habitat mapping should be in accordance with Best Practice Guidance for Habitat Survey and Mapping, Heritage Council 2011.
There are a number of plant species protected under the Flora Protection Order, 1999, which may potentially occur in some of the identified areas. Also, there are breeding sites and resting places of otter, and potentially of bats, (both of which are strictly protected under S.I. No. 477 of 2011), within the MHP areas this will require both survey for these and to comply with the Wildlife Acts and Regulations.
The development of MHP must ensure that they do not impede the ability for fish to migrate upstream. Should a weir be required to be constructed in order to manage the flow to the turbine a fish pass will be required to be integrated to ensure that there is an attractive upstream path for the fish. Each fish pass will be required to be designated in accordance with the fish species contained within the relevant river. All fish passes will be designated and agreed with Inland Fisheries Ireland.
A full archaeological assessment may be required in relation to any proposed application in relation to Micro Hydro Power.
Development of micro hydroelectric power must be undertaken in a sustainable manner with regard to the fisheries resources within the river.
Consultation will be required with the Inland Fisheries Ireland in relation to the development of the micro hydroelectric power sites identified in this strategy.
Facilitating the Development of Anaerobic Digestion Facilities
The Planning Department assessing applications for AD Plants should consider requesting traffic management plans.
Facilitating Pumped Freshwater Hydroelectric Energy Storage
An Environmental Impact Assessment or Ecological Impact Assessment should identify all factors, including ecological corridors, be accompanied by appropriate surveys, undertaken at the correct time of year and be undertaken by a suitably qualified and experienced ecologists. Details of the habitats impacted by the PHES will be required, including descriptions of protected species recorded and mapping of habitat locations and extents. The habitat mapping should be in accordance with Best Practice Guidance for Habitat Survey and Mapping, Heritage Council 2011.
A hydrological and hydrogeological study will be required to be undertaken for all PHES

sites.
A study of potential impacts on the peat soils and risks associated with landslides is required for all PHES sites. This should include a detailed assessment of potential effects on both NHAs and pNHAs which may be affected by any proposed PHES development which should also include an in-combination or cumulative assessment with the development of other renewable energy technologies in the surrounding area.
There are a number of plant species protected under the Flora Protection Order, 1999, which may potentially occur in some of the identified areas. Also, there are breeding sites and resting places of otter, and potentially of bats, (both of which are strictly protected under S.I. No. 477 of 2011), within the PHES areas this will require both survey for these and to comply with the Wildlife Acts and Regulations.
Consultation will be required with the Inland Fisheries Ireland in relation to the development of the PHES within the zones identified in this strategy.
A full archaeological assessment should be undertaken on any proposed application for PHES.
A landscape and visual assessment shall be required for any proposed application for PHES.

9.6 Mitigation Measures associated with the incorporation of the Limerick Northern Distributor Route

Clare County Council adopted Variation No. 3 of the Clare County Development Plan 2011 – 2017 on 24th July 2015.

The purpose of the Variation and now the incorporation into the current County Development Plan 2017 – 2023 is to reflect the preferred route of the Limerick Northern Distributor Road in the Plan, in the interests of clarity; having regard to objective **CDP6.7 University of Limerick Clare Campus** and Table 8.2 of the plan which facilitates specified projects – including the Limerick Northern Distributor Road and linkage to UL - for future development; to facilitate the comprehensive development of the University of Limerick in County Clare a plan-led manner and safeguarding the provision of a vehicular University Link Road from County Clare to the campus.

The assessment highlighted that the adoption of Variation No. 3, without mitigation, has the potential to have a significant effect on the Lower River Shannon SAC. In order for Clare County Council to conclude that there will be no adverse effects on the Lower River Shannon SAC (or any Natura 2000 Site) as a consequence of the adoption of Variation No. 3 and its incorporation into the current County Development Plan 2017-2023 additional mitigation measures require introduction into the County Development Plan. These measures need to address the following:

- potential indirect hydrological impact on the Qualifying Habitats *Molinia* Meadows and Alluvial Woodland within the Knockalisheen Marsh area;
- potential impact on alluvial woodland habitat and otter habitat at the River Shannon Crossing.

The SNH Guidance (2012) and the associated Advice Sheet ‘*Screening general policies and applying simple mitigation measures*’ (SNH 2012) outline the means by which further mitigation measures can be introduced to a Plan. This includes, for example, policy restrictions, policy caveats and prescribing mitigation measures to be confirmed by a more detailed appropriate assessment. In each instance the Guidance is clear that the measures taken must be specific, explicit and added to the policy and not merely added to the explanatory text or commentary.

The SNH Advice sheet states that as a general rule policy caveats, restrictions or qualifications should be:

- a) Included in the plan and not just in the NIR or a supporting document;
- b) Included in the policy wording where policies are distinguishable from the other text, or in the text of the plan where policies are not distinguished from other text;
- c) Specific to the case, issue or proposal and/or the particular European site(s);
- d) Related to the qualifying interests and/or the site potentially affected, and to the NIR and its findings, which must be available and accessible;
- e) Explicit about the meaning and implications for decision-making, such as clearly indicating “*Planning permission will be granted only where it can be ascertained that the proposal would not have an adverse effect on the integrity of [the case specific] European site*”; -
- f) Short and ‘tightly’ worded, the NIR can provide the context, explanation and purpose of the qualification.

Reflecting these criteria, it is recommended that the following measures be incorporated into the Clare County Development Plan 2017 -2023:

Specific Mitigation Measures relating to the LNDR

To avoid potential indirect hydrological impacts on Knockalisheen Marsh

The proposed route corridor of Limerick Northern Distributor Road across the area referred to as Knockalisheen Marsh was specifically located to ensure that there would be no direct impact on any qualifying or Annex habitat.

A grassland assemblage which has been determined to sufficiently resemble the annex habitat *Molinia* Meadows occurs in patches to the north of the route. In addition a small patch of alluvial woodland occurs alongside the Knockalisheen stream (where the Knockalisheen stream regularly floods) and a Marsh habitat (the annex habitat Hydrophilous tall herb fringe communities) was also recorded present to the north of the route. This habitat has specific hydrological requirements.

The mitigation measure in this instance must address the requirement to maintain the existing surface and groundwater conditions within the Knockalisheen Marsh area. This will require hydrological assessment of the area, the outcome of which will be used to direct the design of the road across this area.

It is recommended that the following additional objective be added to CDP 11.8 as a specific objective for the future development of Limerick Northern Distributor Road:

- MM1 Results from a detailed hydrological, hydrogeological and engineering assessment shall inform the design of the Limerick Northern Distributor Road and University Link Road to avoid adverse negative effects on the existing hydrological and hydrogeological regime within the Knockalisheen Marsh area.

Explanatory text:

Detailed assessments undertaken by personnel with relevant expertise shall be completed prior to the design of the proposed road being finalised. The road and any structures across the Knockalisheen Marsh area shall subsequently be designed to avoid any adverse impact on the integrity of the site. This will be facilitated by measures to achieve hydrological continuity by culverting under the road embankment, and by diversion of road drainage runoff to suitable outfalls. The road design will be further informed by the requirement to ensure hydrogeological continuity in the underlying soils.

To avoid potential adverse impacts on the Lower River Shannon SAC as a result of the new crossing point

The design of the structure across the River Shannon is critical to ensure that there is no impact on the river edge habitats, that there is sufficient light under the bridge to ensure retention of the existing vegetation and that the habitat connectivity is maintained.

The design of a structure of this magnitude is a significant undertaking and a balance has to be struck between an objective which restricts the design process and an objective which strengthens the protection of the SAC.

It is recommended that the following additional objective be added to CDP 11.8 as a specific requirement for the future development of Limerick Northern Distributor Road:

- MM2 The design of the River Shannon Bridge shall be informed by the overriding requirement to avoid adverse impacts on the qualifying interests of alluvial woodland, otter and lamprey species when assessed under the Habitats Directive.
- MM3 The bridge abutments will be set back a sufficient distance to allow for the retention of any existing riparian habitats or areas with the potential to develop into alluvial woodland, this will ensure maintenance of ecological connectivity on both banks of the River Shannon.
- MM4 The bridge deck will be constructed at a sufficient height to allow for the continued development of the any alluvial woodland present on both banks of the River Shannon and there will be no net loss of habitat.

Explanatory text:

The proposed bridge over the River Shannon shall be so designed that it will allow for the retention of any existing alluvial and otter habitat/connectivity present on the banks of the Shannon at the crossing location. The necessary ecological assessment of the bridge design will be informed and supported by a detailed review and assessment of similar development in comparably sensitive environments. The construction of the bridge will be required to be monitored by a suitably qualified ecologist.

As mentioned previously lamprey ammocoete beds may occur in the river banks along the River Shannon at the proposed crossing point. In order to address these concerns appropriate surveys to establish any presence of this species will be carried out at the crossing location prior to construction works beginning and where deemed necessary these areas will be salvaged.

To avoid potential adverse impacts on qualifying interests outside the cSAC boundary

Certain watercourses outside the Lower River Shannon cSAC provide habitat for mobile qualifying interests e.g. Otter, Salmon, Lamprey. In addition to this construction works may have an impact on the water quality within these watercourses that are all directly linked and flow into the Lower River Shannon cSAC.

Therefore to ensure that there is no adverse impact on the conservation objectives of the Lower River Shannon cSAC as a result of works being carried out in close proximity to watercourses that fall outside the cSAC boundary it is recommended that the following additional objective be added to CDP 11.8 as a specific requirement for the future development of Limerick Northern Distributor Road:

- MM5 - The Tailrace Canal, Errina Canal and River Blackwater will all be crossed on clear span structures, with the abutments sufficiently set back from the watercourse banks to ensure maintenance of ecological connectivity. The necessary ecological assessment of the design of these bridges will be informed and supported by a detailed review and assessment of similar development in comparably sensitive environments. The construction of the bridges will be required to be monitored by a suitably qualified ecologist. Appropriate mitigation will be employed to avoid risks of pollution during both the constructional and operational phase.

It should be noted that all the above mitigation measures have been included in the adopted variation.

In addition to the above matters due to the nature of the Variation which involves introducing a preferred route corridor within which the road will be located there still remains a considerable amount of uncertainty as to the exact scale, type and construction methodology of the river crossings in particular. However, by undertaking the appropriate assessment process and assessing the cumulative and in-combination effects the most significant effects have been eliminated through avoidance, removal or specifying certain bridge design measures at crossing locations. In order to ensure no significant effects remain at project level and to ensure the current variation has been appropriately assessed further

mitigation as outlined in Table 11.1 has been included to ensure any remaining scientific uncertainty is avoided at project level and consideration of Article 6(4) in particular is undertaken should it be deemed necessary at that stage.

Table 9.6 LNDR Additional Mitigation Measures

Reference	Mitigation Measures
	Design level
DL1	The preferred route corridor has been subject to Appropriate Assessment and the production of an NIR at Plan level, however at project design stage should issues arise under Article 6(3) of the Habitats Directive and the associated assessment produces a finding of adverse effects on the integrity a European site, an alternative solution may be required.
DL2	In selecting the exact watercourse crossing locations within the preferred route corridor, there shall be full compliance with Article 6(3) (and, if warranted, Article 6(4), including compensatory measures) of the Habitats Directive.
DL3	Pre Construction surveys shall be conducted by suitable qualified ecologists to ensure the design stage Appropriate Assessment has a sufficient level of scientific data to inform the assessment.
DL4	A full suite of geomorphological, hydrological and topographical surveys shall be required and provided at project design stage to inform the project level Appropriate Assessment.
DL5	The Construction Method Statement shall form part of the overall project design together with the development of an Environmental Construction Management Plan (ECMP) which together shall be subject to Appropriate Assessment as part of the overall project assessment.
DL6	All permits and consents required as part of the project shall be addressed at project design stage and incorporated as part of the overall Appropriate Assessment
DL7	Ongoing monitoring to assess the real time environmental impact of all site preparation, construction and post construction works shall take place, by suitably qualified ecologists
DL8	The design of any in-stream structure shall not lead to any alteration of the channel morphology, flow regime, depositional patterns or interfere with habitat continuity.
DL9	The bridge deck will be constructed at a sufficient height to allow for the development

	Conservation Objective specific mitigation measures	
Otter		
O1	Direct physical loss/damage to habitats	Detailed otter surveys shall be required and provided for in order to fully understand and mitigate for this risk at design stage.
O2	Direct physical damage to mobile species	The use of protective netting or grids shall be made during the construction stage.
O3	Indirect disturbance or loss of habitat	Minimize the use of high noise emission activities such as impact piling and blasting (should it be required). Enforce speed limits for all equipment used during construction and establish a code of conduct to avoid disturbance to otters both at the construction site and in transit to construction areas if entering areas of habitat usage or distribution.
O4	Direct disturbance	Given the close proximity of the mapped commuting route of Otters (as per the Conservation Objectives for the site (CO002165) downstream of Parteen) any temporary obstruction to connectivity during construction works between the main River Shannon and the tailrace where commuting routes may occur should be alleviated through the installation of appropriately designed Otter passes which shall be routinely checked throughout the duration of the works.
Alluvial woodland		
AW1	Direct physical loss/damage to habitat	At the project design stage all works shall be carefully designed to ensure no direct loss of the priority Annex 1 habitat and/or it's corresponding four vegetation types.
AW2	Indirect disturbance	Areas with the potential to develop into Alluvial woodland where suitable terrain exists and the vegetation composition allows, shall be avoided in order to maintain or increase (subject to natural processes) the overall habitat area and distribution within the SAC.

AW3	Indirect disturbance or loss of habitat	There shall be no alteration to the hydrological regime necessary for maintenance of alluvial vegetation. Periodic flooding is essential to maintain alluvial woodlands along river floodplains.
AW4	Biological disturbance	The project design stage shall ensure negative indicator species, particularly non-native invasive species remain absent or under control.
Sea Lamprey		
SL1	Indirect disturbance or loss of habitat	Any potential impacts to water quality which may lead to an in-direct effect on the extent and distribution of spawning habitat shall be avoided
Brook or River Lamprey		
BRL1	Direct physical loss/damage to habitat	On all lower order watercourses all culverts should be designed in such a way as not to impede distribution and accessibility.
BRL2	Indirect disturbance or loss of habitat	Any potential impacts to water quality which may lead to an in-direct effect on the extent and distribution of spawning habitat shall be avoided
Atlantic Salmon		
AS1	Direct physical loss/damage to habitat	On all lower order watercourses all culverts should be designed in such a way as not to impede distribution and accessibility.
AS2	Indirect disturbance or loss of habitat	Any potential impacts to water quality which may lead to an in-direct effect on the extent and distribution of spawning habitat shall be avoided
Molinia Meadows		
MM1	Direct physical loss/damage to habitat	At the project design stage all works shall be carefully designed to ensure no direct loss of habitat.
MM2		Detailed, targeted surveys will be required and shall be provided in order to maintain or increase (subject to natural processes) the overall habitat area and distribution within the SAC in particular for areas which were previously unmapped.
Watercourses of plane to montane levels		

WC1	Direct physical loss/damage to habitat	At the project design stage all works shall be carefully designed to ensure no direct loss of habitat.
WC2	Indirect disturbance	Detailed, targeted surveys will be required and shall be provided in order to maintain or increase (subject to natural processes) the overall habitat area and distribution within the SAC.
WC3	Indirect disturbance or loss of habitat	Any potential impacts to water quality which may lead to an in-direct effect on the concentration of nutrients or the expected typical vegetation composition shall be avoided.

Chapter Ten - Monitoring

10.1 Requirement for Monitoring

Article 10 of the Strategic Environmental Assessment Directive (2001/42/EEC) requires that monitoring must be undertaken of the significant environmental effects directly related to the implementation of the Plan. This is to provide for any unforeseen adverse effects to be identified at an early stage in its implementation, allowing for appropriate remedial action to be undertaken.

The primary purpose of monitoring is to allow the actual impacts of the Clare County Development Plan 2017-2023 on adoption to be assessed against the Strategic Environmental Objectives and their associated targets and indicators. The indicators used will show changes that would be attributable to the implementation of the County Development Plan.

Monitoring can use existing sources of information and does not necessarily require new research to be undertaken, but can be effective in identifying where additional research should be targeted to supplement where information is deficient. **Table 10.1** sets out the strategic environmental objectives, targets and indicators to applied in monitoring the significant environmental effects of the implementation of the plan, in accordance with Section 13J(2) of the Planning and Development (SEA) Regulations 2004, as amended. It is proposed that the SEA monitoring reporting should go parallel with the reviewing of the Clare CDP.

Table 7.0 below presents the SEA Monitoring Table. The SEA Objectives formed the basis of the assessment of the Clare CDP and it includes targets (overall aim), indicators (measurement of monitoring change), data sources and agency/body responsible for the monitoring.

As a number of the indicators within the monitoring table relate to the number of planning applications received it is also recommended that data arising from planning applications, particularly in terms of environmental monitoring through the preparation of Screening Reports for Appropriate Assessment, Ecological Reports, Environmental Impact Statements, Environmental Reports etc be integrated into the GIS and a dedicated environmental database. This will assist in assessing cumulative impacts also, in particular ecology and water quality. This is something which Clare County Council Planning Department has partially undertaken but which should be prioritised and driven through the CDP Monitoring Programme.

Table 10.1 Strategic Environmental Objectives, Targets and Indicators

Strategic Environmental Objective	Target	Indicator/Data Sources	Source/Responsibility/Frequency
Population, Human Health and Quality of Life			
P1 – Protect, enhance and improve people’s quality of life based on high quality residential, community, educational, working and recreational environments and on sustainable travel patterns.	<p>Increase in the number of green spaces and amenities available to the public.</p> <p>Improved trends in perceived quality of life related to these matters.</p> <p>Bonds to ensure the completion of developments until taken charge.</p> <p>No significant deterioration in human health as a result of environmental factors.</p>	<p>No/area of green spaces and amenities available to the public.</p> <p>Improved trends in perceived quality of life related to these matters as gathered through surveys.</p> <p>Employment rates over the lifetime of the Plan. Completion handover of development to CCC. Availability of public transport/ smarter travel initiatives. Occurrence of any decline in human health around the plan area.</p>	<p>CSO – every six years in line with census CCC - Annual</p> <p>Iarnrod Eireann - Annual Bus Eireann – Annual</p>
P2 - To protect human health from hazards or nuisances arising from incompatible land uses/developments.	No spatial concentrations of health problems arising from environmental factors.	Any occurrence of spatially concentrated deterioration in human health.	CSO – every six years and as results arise on a yearly basis from the 2016 census CCC – Annual
P3 - Provision of green spaces for amenity and recreational uses.	Increase in the number of green spaces and amenities available to the public.	No. /area of green spaces and amenities available to the public.	CCC – Annual
Biodiversity			
B1 – Protect, conserve, enhance where possible and avoid loss of diversity and integrity of the broad range of habitats, species and wildlife corridors.	<p>No reduction in length or loss of hedgerows.</p> <p>Operators who conduct mechanical hedge cutting should have achieved the Teagasc proficiency standard MT 1302-Mechanical Hedge Trimming.</p> <p>30% broadleaf/native afforestation.</p> <p>Protection and promotion of non-designated salmonid rivers.</p> <p>No. ecological networks or parts thereof which provide significant</p>	<p>Percentage of unique habitats and species lost in non-designated sites over the lifetime of the Plan through trending of annual/bi-annual surveys.</p> <p>Percentage of broadleaf/native afforestation.</p> <p>Percentage loss of connectivity between areas of local biodiversity importance as a result of implementation of the Clare County Development Plan as evidenced from a resurvey of CORINE mapping.</p>	<p>CCC – Annual/bi-annual surveys OPW - Annual</p> <p>Coillte- Annual NPWS – Annual or as and when surveys completed by NPWS for National Monitoring programmes on a rolling basis and/or surveillance monitoring undertaken for compliance with Article 17 of the Habitats Directive and reported on every 6 years.</p>

	connectivity between areas of local biodiversity to be lost without remediation as a result of implementation of the Clare County Development Plan 2017 – 2023 Afford the same level of protection to Margaritifera Sensitive Areas as is afforded to Freshwater Pearl Mussel SAC rivers	Decrease in population of freshwater pearl mussels in <i>Margaritifera</i> sensitive areas and/or habitat and water quality deterioration.	CCC - Annual OPW - Annual National Biodiversity Data Centre – Annual Shannon RBD/National RBD – First and second RBMP Cycle
B2 – To achieve the conservation objectives of European Sites (SACs and SPAs) and other sites of nature conservation.	No loss of protected habitats and species during the lifetime of the Plan. No compromise in the favourable conservation condition of European sites. No compromise or impact on the achievement of the favourable conservation condition objectives (whether maintain or restore) of European sites.	Designation of additional areas due to biodiversity and/or geological value. Percentage of unique habitats and species lost in designated sites through trending of annual surveys. No./percentage of developments in/near Natura 2000 network. Percentage of European sites in the plan area that are at 'Favourable' conservation status. Percentage of Qualifying Interest Features which have achieved their specific objectives of maintain or restore.	
B3 - Conserve and protect other sites of nature conservation including NHAs, pNHAs, National Parks, Nature Reserves, Wildfowl Sanctuaries as well as protected species outside these areas as covered by the Wildlife Act.	No loss of protected habitats & species during the lifetime of the Plan. Submission of Screening Report or Natura Impact Statement for proposed developments with planning applications in/and/or near European Sites.	Percentage of unique habitats and species lost in designated sites through trending of annual surveys. Provision/No. of Screening Reports/Natura Impact Statements with developments proposed for sites in/and/or near European sites.	
B4 - Meet the requirements of the Water Framework Directive and the Shannon River Basin Management Plan/National River Basin Management Plan	All waters within the plan area to achieve the requirements of the WFD and the relevant River Basin Management Plan by 2027. Ensure provision of riparian zones at project/site level.	No. of surface and groundwater bodies achieving "Good Status". No of waterbodies indicating deterioration in status. No. of planning applications with sufficient inclusion of buffer zones where necessary and applicable.	
B5 – To minimise and, where possible, eliminate threats to biodiversity including invasive species.	Prevent the introduction of new invasive or alien species. Control/manage new invasive	No., type and location of invasive species identified. No. of actions achieved under the Biodiversity	

	<p>species.</p> <p>Control/manage/eradicate invasive species throughout the county.</p>	<p>Action Plan.</p> <p>Increase/decrease in coverage of invasive species identified.</p> <p>No. of submissions/observations submitted through invasive species Ireland “Alien Watch”. www.invasivespeciesireland.com/alien-watch</p> <p>The National Biodiversity Data Centre will track success in the implementation of the All-Ireland Pollinator Plan by measuring increases in the abundance and diversity of pollinators within the Irish landscape as the 81 actions are implemented.</p>	
B6 - Promote green infrastructure networks, including riparian zones and wildlife corridors.	<p>Ensure new development is set back from rivers.</p> <p>The recommended width for larger river channels (>10m) is 35m to 60m and for smaller channels (<10m) is 20m or greater. The determined width should be tailored to site specific, river reach or lakeshore characteristics and their associated habitats. It is important that the buffer zone is large enough to protect the ecological integrity of the river (including emergent vegetation), the riparian zone (bank side vegetation including trees) and takes into account the human history of the area.</p>	No. planning permissions close to water.	
Soil and Geology			
S1 – To maximise the sustainable re-use of the existing built environment, derelict, disused and infill sites (brownfield sites), rather	<p>Preference for development on brownfield site over green field.</p> <p>Specified % of new applications granted to be on brownfield sites.</p>	<p>No/% of new developments on brownfield sites.</p> <p>Area of brownfield land developed over the plan period.</p> <p>% of total greenfield land developed.</p>	CCC – Annual through a review of planning applications

than greenfield sites.	Limited and controlled development of greenfield sites. Re-use of soil from redeveloped sites where possible. No incidences of soil contamination.	Level of urbanisation. Excessive land-filling of quality soil. Incidences of soil contamination.	
S2 – Minimise the excavation and movement of soils within site works.	Limited and controlled development of greenfield sites. Limit the amount of excavation in sensitive locations for example peat excavation in wind farm sites.	Volume of construction and demolition waste recycled. No. of brownfield sites that have been redeveloped.	CCC – Annual
S3 – Minimise the consumption of non-renewable deposits on site.	Re-use of soils from redeveloped sites where possible. Increased provision of construction and demolition waste facilities.	Excessive land-filling of quality soils. No. of facilities for Construction and Demolition Waste.	CCC – Annual
S4 - Minimise the amount of waste to landfill from site.	Reduction in the quantities of waste sent to landfill. Increase in the quantities of waste sent for recycling. Increase in the number of bring banks in the plan area. Compliance with the Southern Region Waste Management Plan.	Quantity of household waste sent to landfill. Quantity of household waste sent to recycling. The number of bring banks provided for in the plan area. Compliance with the Southern Region Waste Management Plan. Statistical Indicators (Primary and Secondary) reported on through the Southern Waste Region Statistical Indicators Annual Report.	CCC EPA Southern Waste Region – Annually through Statistical Indicators Report and Waste Management Plan Annual Report.
S5 - Conserve, protect and avoid loss of diversity and integrity of designated habitats, geological features, species or their sustaining resources in designated ecological sites.	No loss of diversity and integrity of designated habitats, geological features, species or their sustaining resources in designated ecological sites. Designation of sites as County	Percentage of habitats, geological features, species etc. Lost over the lifetime of the Plan through trending of annual/bi-annual surveys.	GSI

	Geological Sites.	No. of areas designated as County Geological Sites.	CCC - Annual
Water			
W1 – Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystem (quality, level, flow).	To achieve a Q rating of 4 'good' quality status by 2015.	Biotic quality rating of river waters at EPA monitoring locations.	EPA – Annual as recorded through the WFD Monitoring Programme
W2 – Monitor the on-going trends in water quality status.	Demonstrate an on-going status improvement and an upward trend in water quality.	Progression from bad to poor, poor to moderate, moderate to good and good to high in terms of WFD Status.	EPA EDEN Portal – As up-dated through the 2 nd River Basin Management cycle by the EPA.
W3 – Maintain or improve the quality of surface water and groundwater (including estuarine) to status objectives as set out in the Water Framework Directive (WFD), the Shannon River Basin Management Plan and POMS.	Improvement or at least no deterioration in surface water quality by 2015.	Changes in receiving water quality as identified during water quality monitoring for WFD, ShIRBMP/National RBMP conducted by CCC and EPA.	CCC – As reported through the 1 st and 2 nd River Basin Management Plan. EPA – As reported through the 1 st and 2 nd River Basin Management Plan.
W4 – Implement appropriate sustainable drainage systems (SuDS) in the County.	New drainage systems to be compliant with SUDs.	No. of developments granted planning permission that incorporate SUDs.	CCC – Quarterly planning permissions granted.
W5 – Reduce the impact of polluting substances to all waters and prevent pollution and contamination of ground water by adhering to aquifer protection plans and to maintain and improve the quality of drinking water supplies.	Improvement or at least no deterioration in surface and groundwaters by 2015.	Changes in receiving waters and groundwater quality as identified by water quality monitoring programmes conducted by CCC and EPA.	CCC - Annual EPA – Annual
W6 - Promote sustainable water use and water conservation in the plan area and to maintain and improve the quality of drinking water supplies.	Pressure on water and waste water treatment plants.	Decrease in no. of water shortage notices issued during drought periods. Decrease in the amount of water consumed per household in the plan area.	CCC/Irish Water
W7 –Protect flood plains and areas of flood risk from development	In accordance with OPW/DOEHLG, all planning applications within designated Flood Risk Zones A and B	Level and location of flooding.	CCC – Records obtained as and when flood events occur

through avoidance, mitigation and adaptation measures.	as identified in the Strategic Flood Risk Assessment for the plan are required to undertake Flood Risk Assessment.		OPW – As updated on http://www.floods.ie/ and once CFRAMS final maps become available in 2017 and are updated as part of the overall implementation of the Floods Directive in Ireland.
W8 – To promote a responsible attitude to recreation and amenity use of water in relation to water quality and disturbance to species and to prevent pollution and contamination of designated bathing waters.	Maintain water quality, no pollution or contamination issues in our rivers and lakes in particular but also our estuaries and all waters designated as bathing waters.	Adherence to bathing water guidance and standards in accordance with the bathing water Directive and associated regulation Regulation (S.I. No. 79 of 2008).	Retention or approval for Blue Flag status - The Blue Flag is operated in Ireland by An Taisce-The National Trust for Ireland on behalf of the Foundation for Environmental Education (FEE) – Annually Progression of bathing waters from 'sufficient' to 'good' to 'excellent' with no waters categorised as 'poor' in accordance with the water quality standards specified in the 2008 Regulations with a classification of at least 'sufficient' to be achieved for all bathing waters.
Air and Climate Change			
C1 – Minimise all forms of air pollution and maintain/improve ambient air quality.	Maintain ambient air quality through reduction of private vehicle usage.	Air quality indicators.	CCC - Annual EPA - Annual
C2 – Minimise emissions of greenhouse gases and contribute to a reduction and avoidance of human-induced global climate change.	Provide for increased use of public transport. Increase number of cycle lanes and pedestrian routes in the plan area. Establish incentives/increase no. of permissions for renewable energy projects.	Use of public transport. Provision of cycle lanes and walking routes. No. of grants given for insulation works; energy efficiency of new buildings – energy rating figures. No. of planning applications for residential houses with low carbon footprint. No. Of wind turbines permitted which may contribute to mitigation of, and adaptation to	CCC – Annual as new cycle strategy and/or Green Infrastructure is published. CSO – Annual as figures/reports based on 2016 census become available. CCC – No and type of planning applications in relation to low carbon residential housing and wind turbines and/or commencement of construction

		Climate Change. Location of permitted wind farms within areas of the greatest wind energy resource in County Clare as depicted through the SEAI Wind Atlas. http://maps.seai.ie/wind/	of such on an annual basis. SEAI
C3 - Reduce car dependency within the plan area by way of an integrated approach to sustainable urban transport.	An increase in the percentage of the population travelling to work or school by public transport or non-mechanical means. A decrease in the average distance travelled to work or school by the population of the plan area.	Percentage population within the plan area travelling to work or school by public transport or non-mechanical means. Average distance travelled to work or school by the population of the plan area.	CSO – every 6 years through census information.
Material Assets – Transport			
T1 – Maximise sustainable modes of transport and encourage use of walkways/cycle paths as alternative routes to school, work, and shops.	An increase in provision of cycle lanes and pedestrian routes. An increase in population travelling to work and school by public transport or non-motorised transport. A reduction in the distance travelled to work or school by the population of the plan area.	No. of cycle lanes and pedestrian routes provided in the plan area. Percentage of the population within the plan area travelling to work or school by public transport or non-mechanical means. Average distance travelled to work or school by the population of the plan area. Number of private cars on road as a percentage of Annual Average Daily Traffic (AADT).	CCC – Achievement of Clare County Council Active Travel under the Departments Smarter Travel Scheme annually. CSO – every 6 years through census information. NRA
T2 - Provide for ease of movement for all road users and to promote development patterns that protect and enhance road safety.	Reduce the number of private vehicles on the road. Increase in public transport. Increase cycle and walking modes of transport. Integrated traffic management plan for the plan area.	No. of private cars on the road as a percentage of AADT. No. of applications for the Bike to Work Scheme. Traffic survey and pedestrian surveys undertaken in the preparation of a traffic management plan.	CCC - ongoing

Material Assets – Waste			
WA1 – Implement the waste pyramid and encourage reuse/recycling of material wherever possible.	Reduction in the quantities of waste sent to landfill.	Quantity of household waste sent to landfill.	CCC – Environment Department statistics and reports.
	Increase in the quantities of waste sent for recycling.	Quantity of household waste sent to recycling.	Southern Waste Region – Annually through Statistical Indicators Report and Waste Management Plan Annual Report
	Increase in the number of bring banks in the plan area.	The number of bring banks provided for in the plan area.	
	Compliance with the Southern Region Waste Management Plan	Compliance with the Southern Region Waste Management Plan.	
Material Assets – Water Supply			
WS1 - To ensure adequate and clean drinking water supplies.	Upgrade existing water treatment plants within the plan area.	Number of upgrades undertaken within the plan area.	Irish Water – Achievement of Water Services Strategic Plan objectives
			Irish Water – The implementation of the Lead Mitigation Plan over the lifetime of the County Development Plan to achieve safe, clean drinking water for all.
WS2 - Improve efficiency in distribution of potable water to the population through pipe rehabilitation and to promote water conservation and sustainable water usage for long-term protection of available water resources.	Reduce the amount of water usage.	Water meter readings (Reintroduction of water charges based on conservation).	Irish Water – reduction in household costs for water charges based on conservation (This is dependent on water charges being reintroduced; meter readings are still on-going in the absence of charges.
	Reduce the amount of water lost through pipe leakage (currently 65%) through the pipe rehabilitation.	Sale of water harvesting butts.	
	Increase usage of water collected through water harvesting.	Retrofitting of rainwater harvesting units.	
Material Assets – Waste Water			
WW1 - To ensure that all zoned lands (existing and proposed) are connected to the public sewer network ensuring treatment of wastewater which meets EU requirements prior to discharge.	Upgrade existing wastewater treatment plant infrastructure identified within the plan as being insufficient, based on existing and forecasted population demands to meet EU requirements.	Upgraded Waste Water Treatment Plants within the plan area.	Irish Water -Achievement of Water Services Strategic Plan objectives.
			CCC – granting of permission conditioned based on a future WWTP upgrade.
			CCC – refusal of permission as no

			upgrade to WWTP due to take place.
WW2 - Reduce the dependency on individual proprietary wastewater treatment facilities and ensure the highest standards possible in existing and future wastewater treatment facilities.	<p>Testing of individual proprietary wastewater treatment facilities in line with EU/National guidance.</p> <p>Sustainable alternative individual proprietary WWT facilities.</p> <p>Measures to promote encourage and incentivise a change from traditional WWTS to alternative sustainable systems.</p>	<p>No. planning applications for single houses within the plan area, served by individual WWT facility.</p> <p>Testing of individual WWT facilities.</p> <p>Types/usage/percentage using sustainable methods of WWT.</p>	CCC – ongoing.
Material Assets – Renewable Energy			
RE1 - Reduce waste of energy, promote use of renewable energy sources and support energy conservation initiatives across all sectors including the development of low carbon business practices and buildings.	Increase in renewable energy developments.	<p>No. of renewable energy developments granted planning permission.</p> <p>Establishment of R&D projects (one or more).</p> <p>Meet or exceed County contributions to national renewable energy targets.</p> <p>Meet or exceed County contributions to national energy efficiency/conservation targets.</p> <p>In line with the Wind Energy Strategy (Volume 5 of the Development Plan) achieve the minimum target of 550MW from wind energy by 2017.</p> <p>The number of hectares of land that has been converted to use for Bio energy production utilising Miscanthus; Oilseed Rape; Reed Canary Grass or SRC Willow. (Suitable lands have been identified through the SEAI Bioenergy Map http://maps.seai.ie/bioenergy/).</p>	<p>CCC – new solar farms, windfarms or other renewable energy developments granted.</p> <p>LCEA, Clare CoCo, SIFP – number of new R&D projects within the Plan area e.g. testing of tidal energy devices.</p> <p>Southern and Eastern Regional Assembly.</p>
Cultural Heritage			

CH1 – Protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded and unrecorded monuments), architectural (Protected Structures, Architectural Conservation Areas, vernacular buildings, materials and urban fabric) and manmade landscape features (e.g. field walls, footpaths, gate piers etc.).	No permitted development which involves loss of cultural heritage, including protected structures, archaeological sites, Architectural Conservations Areas and landscape features.	No. of developments permitted during the lifetime of the plan which will result in the loss or partial loss of protected structures or sites of archaeological status. No. of additions to the list of Protected Structures. No. of additions to the list of Architectural Conservation Areas. Development of cultural heritage areas for amenity resources.	CCC - ongoing
CH2 – To protect, conserve and enhance local folklore, traditions and placenames within the Plan area.	To increase the use of local placenames within the plan area.	No. Of applications which are referred to the Conservation and Heritage Officers.	CCC - ongoing
CH3 – To ensure the restoration and re-use of existing uninhabited and derelict structures where possible opposed to demolition and new build (to promote sustainability and reduce landfill).	To increase the number of uninhabited and derelict structures that are restored opposed to demolition.	No. planning applications for restoration/re-use of vacant and derelict structures. No. planning applications for demolition and redevelopment of vacant and derelict sites.	CCC - ongoing
Landscape			
L1 – Conserve, protect and enhance valued natural, cultural and built landscapes, views of local value and features including those of geological and aesthetic value.	Ensure no significant disruption of historic/cultural landscapes and features through objectives of the County Development Plan.	No. of developments permitted and their impacts on cultural/historic landscapes. No. of developments located within Scenic Route or no degradation of areas designated as Heritage Landscapes (Locations in text and on maps). No. of developments located within a designated scenic view or route or high landscape area in County Clare that disrupt views (based on the LCA).	CCC – ongoing Heritage Council - ongoing Fáilte Ireland - ongoing GSI - ongoing NPWS - ongoing

		Development and application of framework in relation to the application of LCA and their contribution to SEA.	EPA SEA Unit in conjunction with CCC
L2 - Maintain and enhance landscape quality within the plan area by minimising visual impacts through appropriate design, assessment and siting.	<p>No significant visual impact from development.</p> <p>Ensure no significant disruption of high landscape values.</p>	<p>No. of developments located within a high landscape area that disrupt views (based on LCA):</p> <p>Loss of vistas/views.</p> <p>Loss of trees.</p> <p>Loss of amenity woodland.</p> <p>No of large scale developments permitted.</p>	CCC - ongoing

Chapter Eleven - SEA Recommendations Summary

Throughout the Environmental Report recommendations have been made which, by the iterative nature of the process, have been fed into the plan-making process. A summary of the SEA recommendations set out under the various chapters of this report is set out in Table 11.1 indicating in the second column as to their inclusion within the County Development Plan. These recommendations are in addition to the proposed mitigation included on specific plan objectives and land-use zoning in chapters 8 and 9.

Table 11.1 SEA Recommendation Summary Table

SEA Recommendations	Inclusion in the Plan
Include within the Plan an inventory of SEA recommendations and how they have been incorporated into the Plan	No. This is done within the SEA ER
Refer to Clare County Council's responsibilities and obligations in accordance with all national and EU environmental legislation. It is a matter for Clare County Council, to ensure that, when undertaking and fulfilling their statutory responsibilities, they are at all times compliant with the requirements of national and EU environmental legislation.	Yes.
Make available a copy of the SEA Statement for public inspection at the Local Authority offices, local authority website and also notify any Environmental Authorities consulted during the SEA process.	This will be done following adoption of the Development Plan.
SEA Recommendation - Relationship with other Plans and Policies	Inclusion in the Plan
The Plan should be set in the context of the planning hierarchy and a clear statement should be provided as to the function of the Plan and what the Plan can and cannot do.	Yes.
Where other Plans/Programmes/Strategies are responsible for implementing relevant policies / objectives / initiatives, these should be acknowledged and fully referenced in the Plan.	Yes.
Under the EIA and Planning and Development Regulations certain projects that may arise during the implementation of the Plan may require an Environmental Impact Assessment. There are also requirements with regard to EIA for sub-threshold development.	Yes
Projects would also be required to be screened for Appropriate Assessment as required by Article 6 of the Habitats Directive.	Yes.
<p>Take account of:</p> <ul style="list-style-type: none"> Delivering a Sustainable Energy Future for Ireland – the Energy Policy Framework 2007-2020 White Paper National Climate Change Strategy (NCCS) 2007-2012 	<p>It is an objective of the Plan to achieve a low carbon county and to establish a low carbon economy,</p> <p>It is an objective in the Plan support the implementation of the Limerick Clare Climate Change Strategy 2010, to facilitate measures which seek to reduce</p>

<ul style="list-style-type: none"> • National Renewable Energy Action Plan • Wind Energy Strategy, Volume 5 – Clare County Development Plan 2017-2023 • Renewable Energy Strategy, Volume 6 - Clare County Development Plan 2017-2013 • Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary, Volume 7 of the Clare County Development Plan 2017 - 2023 • Framework and Principles for the Protection of the Archaeological Heritage • Floods Directive and associated CFRAM Studies • Water Framework Directive and associated Shannon and Western (International) River Basin Management Plans 	<p>emissions of greenhouse gases and to adopt sustainable planning strategies,</p> <p>It is a goal in the Plan to achieve a County that is resilient to climate change and that facilitates a low carbon future.</p> <p>Referenced in Section 10.4.4 of the Plan</p> <p>Referenced in Sections 10.4.3 of the Plan</p> <p>This is referenced in Chapter 11 of the Plan.</p> <p>Section 15.4 of the Plan recognises the value and significance of archaeological heritage.</p> <p>Referenced in Objective 18.6 of the Plan.</p> <p>Referenced in Objective 8.23 of the Plan</p>
SEA Recommendations – Biodiversity, Flora and Fauna	Inclusion in the Plan

Biodiversity affects and can be affected by different facets of development and the County Development Plan must recognise and achieve its integration within the various components of the Plan and not consider it in isolation.	Yes.
Green Infrastructure should be incorporated as a component of the County Development Plan in its own right, recognising and acknowledging its inter-relationship with such things as social inclusion, sport, recreation, amenity, quality of life, sustainable transport and climate change. Green infrastructure requires clear definition in the Plan, emphasising that at the core of green infrastructure is biodiversity. Without biodiversity there would be no green infrastructure upon which to create and develop networks which present opportunities as referred to above, reinforcing the importance of the protection of biodiversity. The central theme of biodiversity in the context of green infrastructure should not be diluted or lost.	Green Infrastructure has a separate section in Chapter 14, Section 14.4 of Volume 1 of the Written Statement. Additionally Section 4.3.7 Green Infrastructure within Residential Development, Section 6.3.9 Green Infrastructure within Industrial and Enterprise Zones and Section 18.6.3 Green Infrastructure and Flood Management look at the further importance and linkages with green infrastructure in these areas.
Biodiversity and climate change are deeply inter-connected. Climate change poses one of the biggest threats to biodiversity and the Plan needs to acknowledge and recognise that climate change is a phenomenon that is on-going and as such the baseline information is going to change over time and the Plan needs to be able to provide for these changes by incorporating resilience into the Plan through adaptation and mitigation measures.	Climate Change and Climate Change adaptation specific objectives have been included in chapter 18 as per objectives 18.1 & 18.2
Include an objective in the Plan in relation to the carrying out of a tree survey for the Plan area to inform future developments, townscape works and planting and replanting proposals. Also to ensure that tree species are suited to the Clare landscape.	Yes this has been included as per objective 14.15b.
Include an objective in the Plan which protects and conserves the specific designated sites within the Plan area.	Yes this has been included as per objective 14.2 & 14.3

The promotion of any designated sites for educational, recreational/leisure use it must be an objective that any such activity should not result in a negative impact on water quality and protected habitats and species. The necessary surveys will be required to support this.	Yes.
In an effort to protect and extend wildlife corridors through appropriate boundary treatment, landscaping schemes and planting as part of developments, the Plan should seek to extend the network of wildlife areas within the Plan area.	Yes this has been included as per objective 14.15
The inter-relationship between green infrastructure and recreation should be acknowledged and an objective included to ensure recreational facilities are integrated into a green infrastructure network.	Yes this has been included as per objective 14.24(e)
Maintain existing and promote additional tree planting and undertake a tree survey to quantify any losses/gains.	Yes this has been included as per objective 14.15
Control of alien invasive species and awareness of the methods by which these can be transferred and spread should be incorporated into the plan. Maintaining an up to date register and mapping of alien invasive species within the Plan area should form part of environmental monitoring.	Yes this has been included as per objective 14.23.

SEA Recommendations – Population, Human Health and Quality of Life	Inclusion in the Plan
A definition for social inclusion should be included within the Plan, which should read as “Social inclusion refers to a series of positive actions to achieve equality of access to services and goods, to assist all individuals to participation in their community and society, to encourage the contribution of all persons to social and cultural life and to be aware of and to challenge all forms of discrimination. Social inclusion seeks the creation of an inclusive and fair society, combating inequality, social exclusion and poverty”.	Yes this is undertaken in section 5.3.3 of Chapter 5.
An integrated approach to the future growth of the Plan area, which incorporates resilience to climate change through the implementation of the necessary mitigation and adaptation measures, needs to be adopted to ensure that it provides for a local population that can grow in a safe and healthy environment with the opportunities to live and work within reasonable distance and have access to community needs and services. In doing so to minimise impacts on human health, maintain and improve quality of life through the protection of all facets of the environment, for example in provision of adequate infrastructure, flood management, sustainable transport, provision of necessary health services, building design etc.	Yes this is done through the inclusion of specific Climate Change and Climate Change Adaptation measures.
Where residential developments are to be located near or adjacent to a major road, any scheme should incorporate	This is addressed on a site specific

acoustical planning in the design, e.g. an integrated buffer to allow for sound minimisation to be provided through planting and necessary noise minimising landscaping measures and traffic calming measures.	basis and referred to in the Technical Guidance (Volume 1B) which accompanies the Plan.
SEA Recommendations – Soil and Geology	Inclusion in the Plan
Register and mapping of contaminated sites, including old petrol station sites to co-incide with the Plan objective for development of brown field sites to ensure due diligence, particularly in relation to soil and groundwater, on sites prior to development.	A specific objective has been included as objective 14.16
SEA Recommendations – Air and Climate	Inclusion in the Plan
<p>Climate</p> <p>Climate change must be defined within the County Development Plan and embraced as a central component to the Plan reflecting its importance and need for integration into the various components of the Plan to ensure resilience to future climate change. Mitigation and Adaptation measures should be clearly defined.</p>	Yes. This is achieved through the inclusion of a specific chapter on climate change (Chapter 18) together with linkages and integration across all other chapters including Section 6.3.14 in relation to Green Technology and Climate Change Adaptation, Section 8.2.6 SmarterTravel in terms of Energy Efficiency and Section 18.6 in relation to flood risk management and climate change.
Include an objective within the Plan to prepare a Climate Change Adaptation Plan.	This is a specific objective in the CDP Objective 18.2 (a).
The Flood Risk Assessment is undertaken taking account of the existing use of benefitting lands. Proposed land-use zonings should take this into account, by providing for future development which would be similar or less vulnerable in nature to that of the existing use. The justification test should be undertaken when considering future land-use zonings for designated Flood Zone areas in the Plan area.	Yes.

Continue to support the progression of the development of the Climate Ireland website as a major information resource on climate change in Ireland.	This is not a specific objective of the Plan.
The Plan should include an objective to promote and encourage combined heat and power and district heating.	This is a specific objective in the plan as Objective 18.5.
The Plan should include an objective which seeks to encourage and facilitate the development of low carbon/passive housing by requiring development proposals to demonstrate to detail how it adopts energy efficiency and environmental sustainability.	Yes. This is achieved through the inclusion of objectives 17.3 & 17.4.
The Plan should incorporate and promote sustainable transport including supporting and promoting increased provision of public transport, particularly in relation to a local bus service, to serve the Plan area.	Yes.
The Plan should acknowledge the close inter-relationship between a low-carbon community with green infrastructure by incorporating cross-referencing between and appropriate objectives in this regard e.g promoting the implementation of a green infrastructure strategy will encourage a shift away from the use of private transport to more sustainable modes of walking, cycling etc.	Yes.
<p>Air</p> <p>Uses within neighbourhood centres should be considered in relation to the odours and noise generated by certain commercial activities. Some uses cause localised problems in this regard, for example significant problems occur in relation to dry cleaners (air pollution) and late night takeaways (air pollution and noise from late night customers) and general servicing with late night deliveries causing local disturbance. Mitigation measures – physical buffer between neighbourhood centre and residential areas (e.g. through provision of open space/playing fields etc). Dry cleaners that are to be located in a neighbourhood centre should consist of a collection point with the cleaning process being undertaken off-site in a location suitable to such uses, for example an industrial estate.</p> <p>Facilities where the cleaning process is undertaken must be registered, assessed and have a certificate of compliance with a solvent management plan in place for dry cleaners. Measures should be put in place in accordance with the EPA “Best Practice Guidelines for Dry Cleaners” and “Best Practice Guidelines for Vehicle Refurbishment” to minimise</p>	This is not explicitly stated in the Plan.

the risk of air contamination from these sources.	
The protection of trees within the Plan area, as well as the requirement for additional planting to accompany proposals for development in recognition of their multi-functional role they play within the environment i.e. carbon sink, noise buffer, biodiversity and amenity value.	The importance of trees within the county is highlighted throughout the Plan and through the inclusion of objectives 14.15
Prepare an integrated sustainable transport plan, including mobility and permeability within the town centre, neighbourhoods and the linkages between them, including green infrastructure.	This is incorporated throughout the Plan as reference is made to sustainable mobility, including walking, cycling and green infrastructure strategies and through the inclusion of objective 8.10.
SEA Recommendations – Water	Inclusion in the Plan
Water conservation should be a priority in increasing water supply.	Yes through the inclusion of objective 8.23(e)
Issues in relation to climate change and the impacts on water supply and water quality need to be incorporated into the Plan. Although uncertain in terms of how climate change will fully manifest itself, the observed changes and anticipated future change in precipitation patterns and air temperatures e.g. water conservation through on-going pipe rehabilitation, promoting use of grey water and rainwater harvesting.	The interrelationship between climate change and the impacts on water quality and supply are inherent throughout the Plan.
Register and mapping of contaminated sites.	This is included as an objective in the Plan through the requirement to undertake due diligence and remedial works for all contaminated lands.
Register and mapping of oil leakages.	This is not included as an objective in the Plan but can form part of a long term monitoring initiative.

Promote the need for compliance of dry cleaners and vehicle refinishing facilities with the 2014 Regulations and to ensure a best practice approach in relation to operation and waste disposal to remove the risk of discharge and subsequent contamination of surface and/or ground waters.	This is not included in the Plan, however monitoring compliance can form part of a long term monitoring initiative
The measures required for protection of water quality need to be seen as an integrated approach incorporated into the numerous aspects of strategic planning and land use zoning.	Yes.
Flood Plains as natural flood storage areas should be protected from development.	Yes in corporate through the zoning analysis in Volume 3 and the associated SFRA.
SEA Recommendations – Material Assets	Inclusion in the Plan
<p>Transportation</p> <p>Promote sustainable travel by providing for the development of greenways/walkways/cycleways, in conjunction with green infrastructure, within the Plan area.</p> <p>Prepare and implement a Sustainable Traffic Management Plan for the plan area in conjunction with improved pedestrian mobility and permeability for the town centre. Undertake the necessary traffic surveys to inform the preparation of a traffic management plan.</p> <p>Utilise and upgrade existing laneways in improving permeability.</p>	<p>Yes through the inclusion of objective 8.10.</p> <p>No specific objective relating to Sustainable Traffic Management was included in the Plan.</p>
<p>Water Supply</p> <p>Monitor water leakages to measure improvement from pipe rehabilitation works.</p> <p>Monitor water usage through metering.</p>	Yes this will be achieved in collaboration with Irish Water and through the inclusion of specific water conservation measures as per objectives 8.22
Waste Water Treatment Infrastructure	Yes through the inclusion of

Include an objective which requires development proposals to be adequately served by wastewater treatment which complies with the Water Framework Directive 2000, the EU Urban Wastewater Directive and the Habitats Directive.	objective 8.25
SEA Recommendations – Cultural Heritage	Inclusion in the Plan
Include an objective in the plan which incorporates the importance of the specified ACAs within the Plan period.	Yes specific objective included at 15.5 plus detailed reference to all ACAs through the SEA assessment of settlements and associated zonings.

SEA Recommendations – Landscape	Inclusion in the Plan
To ensure local landscape features are recorded and protected, as they are the ones most likely to be lost incrementally in plan area.	This is achieved for urban areas through the inclusion of objective 3.13 under urban and rural settlement.
To record and protect important views within both the urban and rural areas of the Plan area.	This is achieved through the inclusion of objectives 13.3 and 13.7
To survey and protect trees and areas of woodland within the Plan area as important landscape features and to identify potential new areas for creating woodland areas.	Yes this is achieved through the inclusion of objective 14.15

References

Action Plan for Jobs; Mid West Region 2015 – 2017, Department of Jobs, Enterprise and Innovation, 2015

Architectural Heritage Protection - Guidelines for Planning Authorities, Department of Environment, Heritage and Local Government 2004

CASS, 1997. Criteria for the Evaluation of Landscape. Clare County Council

Clare County Council, 2011. Clare County Development Plan 2011-2017 Strategic Environmental Assessment – Environmental Report Volume 3.

Clare County Council, 2011. The Clare County Development Plan 2011-2017. Clare County Council <http://www.clarecoco.ie/planning/planning-strategy/development-plans/clare-county-development-plan-2011-2017/#NewPplan>

Clare County Council, 2015. The Clare County Development Plan 2017 – 2023. www.clarecoco.ie/planning/planning-strategy/development-plans/clare-county-development-plan-2017-2023/

Central Statistics Office, 2011. Census 2011: Principal Demographic Results. Dublin; Stationary Office. <http://census.cso.ie/areaprofiles/>

Central Statistics Office, 2011. Census 2011: Small Area Population Statistics. Dublin; Stationary Office. <http://www.cso.ie/en/census/census2011smallareapopulationstatisticsaps/>

K. Daly, K. and Fealy, R., 2007 Digital Soil Information System for Ireland – Scoping Study. Environmental protection Agency ERTDI Report 72.

Department of Communications, Marine and Natural Resources, 2007. Delivering A Sustainable Energy Future For Ireland. The Energy Policy Framework 2007–2020.

Department of the Environment, Heritage and Local Government, 2004. 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. <http://www.environ.ie/en/Publications/DevelopmentandHousing/Planning/FileDownload,1616,en.pdf>

Donnelly, A., Jennings, E., Finnan, J., Mooney, P., Lynn, D., Jones, M., O'Mahony, T., Thérivel, R. and Byrne, G. 2006a. Objectives, targets and indicator for use in Strategic Environmental Assessment (SEA). Journal of Environmental Assessment Policy and Management 8: 135-156.

Donnelly, A., Jones, M.B., O'Mahony, T. and Byrne, G., 2006b. Decision support framework for establishing objectives, targets and indicators for use in SEA. Impact Assessment and Project Appraisal 24: 151-157.

Donnelly, A., Jones, M.B., O'Mahony, T. and Byrne, G., 2007. Selecting environmental indicators for use in strategic environmental assessment. Environmental Impact Assessment Review 27: 161-175.

Environmental Protection Agency, 2003. Development of Strategic Environmental Assessment (SEA) - Methodologies for Plans and Programmes in Ireland. Environmental Protection Agency: Wexford. http://www.epa.ie/downloads/advice/ea/epa_development_methodology_sea_synthesis_report.pdf

Environmental Resources Management (ERM), 2003. Landscape Character Assessment of County Clare. Clare County Council and the Heritage Council.

EPA, 2006, 'Air Quality in Ireland 2006 Key Indicators of Ambient Air Quality' http://www.epa.ie/downloads/pubs/air/quality/epa_air_quality_report_2006.pdf

EPA, 2008, SEA Process Draft Checklist <http://www.epa.ie/downloads/advice/ea/SEA%20Process%20Checklist.pdf>

European Commission, 1979. Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). Official Journal of the European Communities, Brussels, L 103: 0001 – 0018. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1979:103:0001:0005:EN:HTML>

European Commission, 1992. Directive 92/43/EC on the Conservation of Natural Habitats and of Wild Fauna and Flora (The Habitats Directive). Official Journal of the European Communities, Brussels, L 206: 7-50. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:HTML>

European Commission, 1999. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. European Commission, Brussels.

European Commission, 2000. Managing Natura 2000 Sites – The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

European Commission, 2001. Assessment of plans and projects significantly affecting Natura 2000 sites- Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EC. European Commission, Brussels.

European Commission, 2001. Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment. Official Journal of the European Communities; Brussels, L197: 30–7.

European Commission, 2002. Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

European Commission, 2003. Implementation of Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment, Brussels.

European Landscape Convention, 2002

European Union, 2001. Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and

Programmes on the Environment. Official Journal of the European Communities L197 of 21 July 2001, p. 30. http://ec.europa.eu/environment/eia/full-legal-text/0142_en.pdf

Global Development Research Centre, 2007. www.gdrc.org/uem/ait-terms-html

Government of Ireland, 2000 (as amended). Planning and Development Act. House of the Oireachtas: Dublin.

Heritage Act (1995)

<http://www.irishstatutebook.ie/1995/en/act/pub/0004/index.html>

Irish Water, June 2015. Water Supply Project Eastern and Midlands Region Options Working Paper (OWP) Non Technical summary.

Irish Water, November 2015. Water Supply Project Eastern and Midlands Region Preliminary Options Appraisal Report Volume 1 Main Report.

Irish Water, November 2015. Water Supply Eastern and Midlands Region Preliminary Options Report (POAR) Non Technical Summary.

Limerick Clare Energy Agency, 2006. Limerick Clare Climate Change Strategy, 2006. Limerick Clare Energy Agency.

Limerick Clare Energy Agency, 2012. Limerick Clare Climate Change Strategy, 2012. Limerick Clare Energy Agency.

Limerick Clare Energy Agency, 2010. Limerick Clare energy & Emissions Balance 2010.

McGrath et al.2005. Climate Change: Regional Climate Model Predictions for Ireland. Environmental protection Agency ERTDI Report 36.

MWRA/Mid West Regional Authority, 2009. The Mid West Region Biomass Action Plan. Mid West Regional Authority. http://www.mwra.ie/european_union_projects/BioMobProject.shtml

MWRA/Mid West Regional Authority, 2010. Mid West Regional Planning Guidelines 2010-2022.

OPW, 2009. The Planning System and Flood Risk Management. Guidelines for Planning Authorities. Department of the Environmental Heritage and Local Government.

Parkes, McAteer and Engering, 2005. An audit of County Geological Sites in Clare. Irish Geological Heritage Programme The Heritage Council, The Geological Heritage of Clare, and Clare County Council.

Planning and Development Regulations, 2001 Department of the Environment, Heritage and Local Government

Statutory Instrument, No 436 of 2004. Planning and Development (Strategic Environmental Assessment) Regulations. Stationery office: Dublin
<http://www.irishstatutebook.ie/2004/en/si/0436.html>

Statutory Instrument, No. 435 of 2004. Environmental Assessment of Certain Plans and Programmes.

Stationery Office: Dublin. <http://www.irishstatutebook.ie/2004/en/si/0435.html>

Statutory Instrument, S.I. No. 94 of 1997. European Communities (Natural Habitats) Regulations, 1997.
Stationery office: Dublin

<http://www.irishstatutebook.ie/1997/en/si/0094.html>

The Department of the Environment, Heritage and Local Government, 2009 National Spatial Strategy – State of the Regions Report, DoEHLG

<http://www.mwra.ie/Publications/documents/StateofTheRegionsReportFinalPublishedversion5May2009.pdf>

The Department of Environment, Community and Local Government, Planning Policy Statement, 2015

The Department of Environment, Community and Local Government, Significant Water management Issues in Ireland, Public Consultation Document, June 2015.

The United Nations, 1992. Convention on Biodiversity, 1992 <http://www.cdb.int/convention/text/>

The **CAAS Report (1997)** “Criteria for the Evaluation of Landscape Quality” which identified the visually sensitive features of the landscapes of the County and informed the 1999 Clare County Development Plan; and

The **Heritage Council Landscape Character Study/ERM (2003)**, which provided a very detailed characterisation of the different parts of the County in line with the thinking of the DoEHLG (2000) Landscape and Landscape Assessment – Draft Planning Guidelines for Planning Authorities.

The National Landscape Strategy (NLS) for Ireland 2015-2025

Thérivel, R 2004. Strategic Environmental Assessment in Action. Earthscan, London, UK, pp 276.

Wildlife (Amendment) Act, No 38 of 2000.

<http://www.irishstatutebook.ie/2000/en/act/pub/0038/index.html>

Wildlife Act, No. 39 of 1976 <http://www.irishstatutebook.ie/1976/en/act/pub/0039/index.html>



CLARE COUNTY
DEVELOPMENT PLAN

2017
2023



Comhairle Contae an Chláir
Clare County Council

Clare County Council,
Áras Contae an Chláir,
New Road,
Ennis, Co. Clare

Tel: +353 (65) 682 1616
planoff@clarecoco.ie
www.clarecoco.ie

10b(ii)

Clare County Development Plan 2017-2023
Strategic Environmental Assessment
Environmental Report