

STRATEGIC ENVIRONMENTAL ASSESSMENT ENVIRONMENTAL REPORT

FOR

VARIATION No. 2 (A) TO THE GALWAY COUNTY DEVELOPMENT PLAN 2015-2021

BEARNA PLAN

for: Galway County Council

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List of Abbreviations

AA	Appropriate Assessment
ACA	Architectural Conservation Area
CFRAM	Catchment Flood Risk Assessment and Management
CSO	Central Statistics Office
DEHLG	Department of the Environment, Heritage and Local Government
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EU	European Union
GSI	Geological Survey of Ireland
NHA	Natural Heritage Area
NIAH	National Inventory of Architectural Heritage
OPW	Office of Public Works
RAL	Remedial Action List
RBD	River Basin District
RMP	Record of Monuments and Places
RPA	Register of Protected Areas
RPS	Record of Protected Structures
RPGs	Regional Planning Guidelines
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEO	Strategic Environmental Objective
SI No.	Statutory Instrument Number
SPA	Special Protection Area
WFD	Water Framework Directive

Glossary

Appropriate Assessment

The obligation to undertake Appropriate Assessment derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC. AA is a focused and detailed impact assessment of the implications of a strategic action (such as a plan or programme) or project, alone and in combination with other strategic actions and projects, on the integrity of a European Site in view of its conservation objectives.

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.

Environmental Problems

Annex I of Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th 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 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.

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.

Protected Structure

Protected Structure is the term used in the Planning and Development Act 2000 as amended to define a structure included by a local 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 local authority that the part of the structure to be altered is not protected.

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 Culture, Heritage and the Gaeltacht under Section 12 of the National Monuments (Amendment) Act, 1994.

Scoping

Scoping is the process of determining what issues are to be addressed, and setting out a methodology in which to address them in a structured manner appropriate to the plan or programme. Scoping is carried out in consultation with appropriate environmental authorities.

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.

Strategic Environmental Objective (SEO)

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level and are used as standards against which the provisions of the Variation and the alternatives can be evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

Section 1 SEA Introduction and Background

1.1 Introduction and Terms of Reference

This is the Strategic Environmental Assessment (SEA) Environmental Report for the Variation 2 (a) to the Galway County Development Plan 2015-2021. It has been undertaken by CAAS Ltd. on behalf of Galway County Council.

The purpose of this report is to provide a clear understanding of the likely environmental consequences of decisions regarding the preparation of the Variation 2 (a) to Galway County Development Plan under Sections 11 and 12 of the Planning and Development Act 2000 (as Amended). The SEA is carried out in order to comply with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (Statutory Instrument Number (SI No. 436 of 2004) as amended. This report should be read in conjunction with Variation 2 (a).

1.2 SEA Definition

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before such decisions are made. *Environmental Impact Assessment*, or EIA, is generally used for describing the process of environmental assessment for individual projects, while *Strategic Environmental Assessment* or SEA is the term which has been given to the environmental assessment of plans and programmes, which help determine the nature and location of individual projects taking place. SEA is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme, in order to insure that these effects are adequately addressed at the earliest appropriate stages of decision-making in tandem with economic, social and other considerations.

1.3 SEA Directive and its transposition into Irish Law

Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the Environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including tourism.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of Regulations became operational on 21st July 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011) and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (SI No. 201 of 2011).

1.4 Implications for Variation 2 (a)

This report has been updated in order to take account of recommendations contained in submissions and in order to take account of Material Alterations that were made on foot of submissions. Galway County Council has taken into account the findings of this report and other related SEA output during their preparation of Variation 2 (a). An SEA Statement has also been prepared that summarises, inter alia, how environmental considerations have been integrated into the Variation 2 (a).

Section 2 Variation 2 (a)

2.1 Introduction

The purpose of Variation 2 (a) to the Galway County Development Plan 2015-2021 is to integrate a Plan for Bearna into the Galway County Development Plan 2015-2021 as varied.

2.2 Strategic Vision of the Bearna Plan

The Strategic Vision of the Bearna Plan is as follows:

'To promote Bearna as a sustainable and vibrant coastal village, which maintains its attractive character, capitalises on its existing and future accessibility strengths, while offering a pleasant environment for a growing community, for living, shopping, education, business, recreation and tourism, all balanced against the need to safeguard and enhance the environmental sensitivities of the area, for present and future generations to come'.

This Strategic Vision is informed by the following guiding principles that will enable the overall vision to be achieved:

- Providing for a sustainable level of development that is appropriate to the character, heritage, amenity and strategic role of Bearna and that allows for the enhancement of the village character, services, facilities and amenities.
- Supporting and protecting the environment, heritage, character and amenity of the village, in particular its Gaeltacht status, fishing heritage, local village character and coastal amenity.
- Promoting a high quality built environment with a well-developed public realm and promoting appropriate building forms, materials, heights and associated landscaping that complement the distinctive character, heritage and amenity of the village.
- Ensuring that there are a range of facilities, amenities and supporting services including educational, recreational, religious, social,

community and civic requirements for children, youths, adults and older persons, to serve a growing community, as well as visitors to Bearna.

- Ensuring Bearna is well connected to, but has a strong local identity separate from, nearby settlements, in particular Galway City to the east and Na Forbacha to the west.
- Optimising the potential of the village's coastal location and amenity, particularly in relation to the provision of public access to the seashore, opportunities for water-related amenities and activities and an appropriate interface between land and sea.
- Maintaining a vibrant and accessible village centre that is within walking/cycling distance from most places in the village, that has a strong focal point with Bearna Pier and the harbour and that provides a range of community facilities and commercial services for the local community.
- Supporting an appropriate level of services and infrastructure to facilitate existing and future growth and sustainable development, in a manner that protects and is complementary to the environment, heritage, character and amenities of the village.
- Promoting a strong sense of community spirit, civic pride, local identity and social inclusiveness, and promoting the status of the Irish language in Bearna and its contribution to the linguistic heritage of An Gaeltacht.

2.3 Structure of the Variation

The Variation is structured as follows:

- Section 1 'Introduction';
- Section 2 'Land Use Management';
- Section 3 'Development Guidelines';
- Section 4 'Land Use Zoning Matrix'; and
- Section 5 'Land Use Zoning and Flood Maps for Bearna'.

2.4 Material Alterations to Proposed Variation 2 (a) that was placed on public display

16 Material Alterations were proposed after public display of the Proposed Variation. Proposed Material Alterations No. 1-7 were determined as requiring full SEA. Full SEA (and Stage 2 AA) was undertaken on these Material Alterations and the findings of the SEA were placed on public display alongside the Material Alterations. The Elected Members were also informed of the findings.

The SEA found that, among other things:

- Material Alterations No. 1-6 provide for a range of incompatible uses within areas that are at elevated risk of flooding (these areas were identified by the Strategic Flood Risk Assessment);
- Material Alterations No. 1-6 provide incompatible uses that are contrary to proper and sustainable flood risk management and contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*;
- If any of the lands subject to Proposed Material Alterations No. 1-6 that are located within Flood Zones A or B were developed, there would be a heightened risk of flooding and associated adverse effects on people and their assets. Such effects are identified on Table 2.1 and range from loss of life, to damage to property, to loss of income;
- Material Alterations No. 1-6 would result in elevated potential for water quality to be adversely affected (as a result of flooding of water treatment systems and collection networks and flooding of unknown substances stored onsite). Polluted or contaminated waters would have the potential to adversely affect human health and biodiversity and flora and fauna (including designated European Sites); and
- Taking into account the considerable extent of lands involved, cumulative adverse effects would be likely to arise

on all environmental components as a result of the provision of unnecessary zoning (for which there is no established planning need) under Material Alterations No. 1-7¹.

Table 2.1 Selection of Adverse Effects (on People and Property) that occur as a result of Flooding

Tangible Effects	Intangible Human and Other Effects
Damage to buildings (houses)	Loss of life
Damage to contents of buildings	Physical injury
Damage to new infrastructure e.g. roads	Increased stress
Loss of income	Physical and psychological trauma
Disruption of flow of employees to work causing knock on effects	Increase in flood related suicide
Enhanced rate of property deterioration and decay	Increase in ill health
Long term rot and damp	Homelessness
	Loss of uninsured possessions

In order to be consistent with the need to contribute towards proper planning and sustainable development and in order to comply with the Flood Risk Management Guidelines, it was recommended by the SEA that zoning as proposed by Proposed Variation 2 (a) and not zoning as proposed by the Material Alterations was selected.

Elected Members decided to select zoning as proposed by the Material Alterations. This zoning is contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*.

2.5 Further modification

A further modification to Material Alterations No. 1 to 6 was made as a result of the AA process. This modification relating to Objective CCF6 "Inappropriate Development on Flood Zones" was included within the Variation on foot of a recommendation from the AA process in order to avoid potential effects on European Sites arising from zoning within floodplains.

¹ Note that MA7 is located within Flood Zone C.

2.6 Relationship with other relevant Plans and Programs

Variation 2 (a) sits within a hierarchy of strategic actions such as plans and programmes and is subject to a number of high level environmental protection policies and objectives with which it must comply (including those detailed in Appendix I, Section 4, Section 5 and Section 9 of this report).

Examples of Environmental Protection Objectives include the aim of the EU Habitats Directive - which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States - and the purpose of the Water Framework Directive - which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving *good status*.

It is noted that certain zoning provided for by the Plan is not contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*.

Section 3 SEA Methodology

3.1 Introduction to the Iterative Approach

Figure 3.1 provides an overview of the integrated Variation preparation, SEA, Appropriate Assessment (AA) and Strategic

Flood Risk Assessment (SFRA) processes. The preparation of the Variation, SEA and AA have taken place concurrently and the findings of the SEA, AA and SFRA have informed Variation 2 (a).

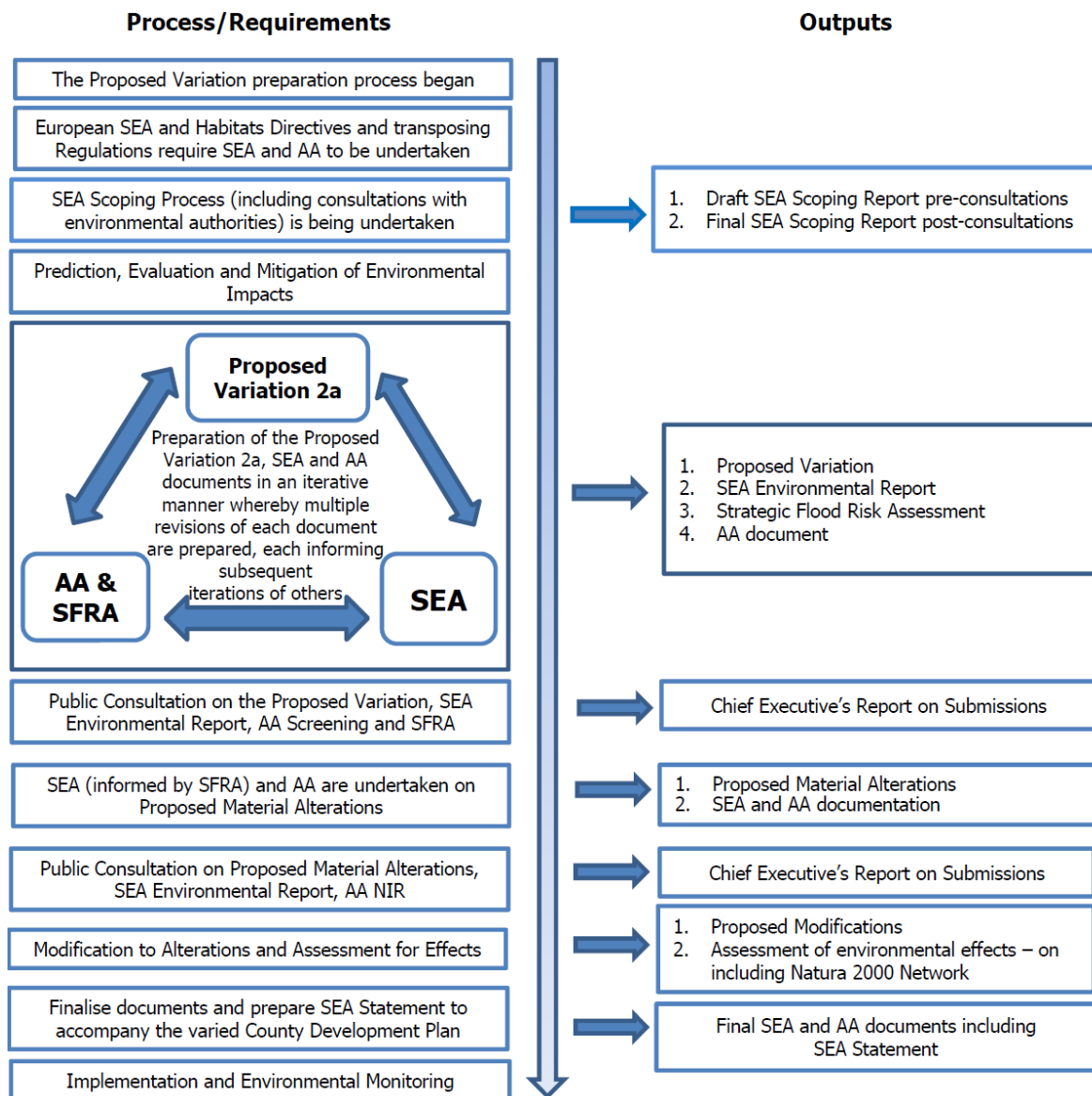


Figure 3.1 Overview of Variation 2 (a)/SEA/AA/SFRA Process and Outputs

3.2 Appropriate Assessment and Integrated Biodiversity Impact Assessment

3.2.1 Appropriate Assessment

Appropriate Assessment (AA) has been undertaken alongside the preparation of the Variation 2 (a).

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC).

The preparation of the Variation, SEA and AA has taken place concurrently and the findings of the AA have informed both the Variation and the SEA. All recommendations made by the AA were integrated into the Variation.

The conclusion of the Stage 2 AA is that Variation 2 (a) is not foreseen to give rise to any significant adverse effects on designated European Sites, alone or in combination with other plans or projects. Specific mitigation measures had to be integrated into the Variation in order to avoid potential effects arising from zoning within floodplains.

3.2.2 Integrated Biodiversity Impact Assessment

Many elements of Integrated Biodiversity Impact Assessment as detailed in the EPA's (2013) Practitioner's Manual have been aligned with in the undertaking of the SEA for the Variation. These include:

Scoping

- Biodiversity-relevant issues were identified for consideration at scoping stage and these are now detailed in Section 4.3.
- Reference to a zone of influence is provided, including at Section 4.3.

Current State of the Environment

- Biodiversity data sources relevant for this national level assessment have been identified.
- Designated sites and other habitats and species of ecological value are identified.
- AA information has been incorporated into the SEA.

Alternatives

- Impacts upon biodiversity are considered under each of the alternatives and certain potential conflicts can be mitigated.

Impact assessment

- Effects on biodiversity are identified and assessed and the AA gives consideration to the interrelationship between biodiversity and potential effects on European Sites.

Mitigation and monitoring

- Taking into account all measures contained within the Variation 2 (a), all of the proposed mitigation measures deriving from the various processes were generally consistent and compatible.
- Indicators and associated targets have been included in SEA for monitoring European Sites.

Reporting

- This SEA ER addresses all biodiversity-related considerations relevant for this level of assessment.
- This SEA ER contains all biodiversity-relevant information, data, figures and maps relevant for this level of assessment.
- This SEA ER has been informed by the AA findings.

Communication and consultation

- Submissions from various environmental authorities have been taken on board.
- The preparation of the Variation, SEA and AA has taken place concurrently and the findings of the AA have informed both the Variation and the SEA.

3.3 Strategic Flood Risk Assessment

3.3.1 Overview

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Variation. The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The SFRA provides an appropriately strategic assessment of flood risk within the town of Bearna and has been undertaken in full compliance with the 2009 Flood Guidelines and subsequent circular PL2/2014. The SFRA has been undertaken with the aim of protecting existing and future properties and populations from the adverse effects of flooding.

3.3.2 Submissions received on Flood Zones and Zoning

The SFRA includes the delineation of flood zones. Various submissions were received during the Variation preparation/adoption process that requested reductions to these

flood zones, however in all instances insufficient evidence was provided to justify any reductions to the extents of the flood zones and therefore changes on this basis would be contrary to the Flood Guidelines. Zoning of these lands as requested, for residential and/or village centre development, would be inappropriate and contrary to the Guidelines.

Allowing inappropriate land use zoning in flood zones would also be contrary to the correct approach followed in the 2012 Bearna Plan – where the Flood Guidelines were adhered to.

Submissions requesting changes to land use zoning failed to demonstrate awareness of the evidence of historical flooding in this area in 1977, 2015 and 2017. Photos and videos have been submitted on two occasions during the plan making process, January 2018 and May 2018, which relate to lands adjoining the Trusky Stream.

A number of submissions identify that flood risk arising from zoning for incompatible uses in within Flood Zones A/B can be adequately managed by structural and non-structural flood risk management measures however this would not be in compliance with the Flood Risk Management Guidelines².

Furthermore, where channel clearance works have been undertaken, the Office of Public Works (OPW) have advised (February 2018) that it would be contrary to the precautionary principle to assume that rivers will be maintained in their improved state by a private land-owner. There is no statutory duty on or budget for the OPW to maintain river schemes in Bearna. The OPW have identified that it would not actively condone private clearance for the purpose of achieving a re-zoning of

² Page 21 “Chapter 3 Principles and Key Messages”, “Key Messages”: *“Only when both avoidance and substitution cannot take place should consideration be given to mitigation and management of risks.”*

Lands proposed by submissions to be zoned for inappropriate uses are within Flood Zone A, an area at elevated risk of flooding. The Guidelines require a sequential approach involving firstly to avoid inappropriate development in this area. Exceptions to the restriction of development are only allowed where a detailed Justification Test (taking into account flood risk management measures) is passed. A Justification Test would not be passed in this instance as there are more alternative lands available for village centre/residential uses in Bearna. As a Justification Test would not be passed consideration cannot be given to the mitigation and management of risk.

land. Is it therefore unreasonable to identify flood zones based on the non-equilibrium depth of the channel.

On foot of a number of submissions from Bearna residents that contained video and photographic evidence of historic flooding in the Cnoc Fraoigh area on lands adjoining the Trusky Stream in 2015 and 2017, Flood Zone A at Cnoc Fraoigh was extended. It is also noted that evidence was provided of a flood event in the vicinity of the R336, the Twelve Pins Hotel and Pier Road, when a number of houses in the Pier Road area were flooded as well as undeveloped land that is now developed.

A Flood Study for the Cnoc Fraoigh lands that was included as part of a separate submission did not provide any contrary evidence that these photos were incorrect or that there was any rationale for flooding on these lands on two occasions. In review of this submission, reference was made to a previous planning application (09-1278) that referenced “Other Natural Lake/Flooding” to lands to the east of Cnoc Fraoigh Housing Estate.

Given the issues that presented during the Variation preparation/adoption process as summarised above and combined with the significant number of recent floods in the County, it was identified that it would be irresponsible and reckless to zone lands for vulnerable uses in these areas.

3.3.3 Compliance of Variation 2 (a) with the Flood Guidelines

The preparation of the Variation, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed the SEA. The SFRA has facilitated the integration of certain flood risk management considerations into the Variation. However, certain Material Alterations were made to Proposed Variation and adopted by the Elected Members as part of the adopted Variation. These Material Alterations provide for a range of incompatible uses within areas that are at elevated risk of flooding and are contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*. Consequently the Variation is contrary to these Guidelines and associated Circular.

3.4 Scoping

3.4.1 Introduction

The scope of environmental issues to be dealt with by the SEA together with the level of detail to which they are addressed was decided upon taking into account the level of detail included in the Proposed Variation and submissions received from environmental authorities. Scoping allowed the SEA to become focused upon key issues relevant to the environmental components which are specified under the SEA Directive³.

3.4.2 Scoping Notices and Submissions

As part of the scoping process, environmental authorities⁴ were notified that a submission or observation in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council.

Submissions were made by the Environmental Protection Agency and Department of Culture, Heritage and Gaeltacht. These submissions influenced the scope of the assessments as detailed in the final SEA Scoping Report.

3.5 Environmental Report

The SEA Environmental Report predicts and evaluates the likely environmental effects of the Proposed Variation 2 (a) and relevant alternatives. The Environmental Report provides the Council, stakeholders and the public with a clear understanding of the likely environmental consequences of the Variation 2 (a).

³ These components comprise biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

⁴ The following authorities were notified: Environmental Protection Agency, Department of Communications, Climate Action and Environment, Department of Agriculture, Food and the Marine, Department of Housing, Planning and Local Government, Department of Culture, Heritage and the Gaeltacht, Galway City Council, Mayo County Council, Roscommon County Council, Offaly County Council, Tipperary County Council and Clare County Council.

Mitigation measures to prevent or reduce significant adverse effects posed by the Proposed Variation are identified in Section 9 - these have been integrated into the Variation.

An earlier version of this final Environmental Report was placed on public display alongside the Proposed Variation. This earlier version was updated in order to take account of recommendations contained in submissions and in order to take account of changes that were made to the Proposed Variation that was placed on public display.

The Environmental Report is required to contain the information specified in Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004), as amended (see Table 3.1).

No significant difficulties have been encountered during the undertaking of the assessment to date.

3.6 SEA Statement

An SEA Statement has been prepared and is available alongside the adopted Variation. This Statement includes information on:

- How environmental considerations have been integrated into the Variation, highlighting the changes to the Variation which resulted from the SEA process;
- How the SEA Environmental Report and consultations have been taken into account, summarising the key issues raised in consultations and in the Environmental Report and indicating what action was taken in response;
- The reasons for choosing the Variation in the light of the other alternatives, identifying the other alternatives considered, commenting on their potential effects and explaining why the Variation as adopted was selected; and
- The measures decided upon to monitor the significant environmental effects of implementing the Variation.

Table 3.1 Checklist of Information included in this Environmental Report

Information Required to be included in the Environmental Report	Corresponding Section(s) of this Report
(A) Outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes	Sections 2, 5 and 8
(B) Description of relevant aspects of the current state of the environment and the evolution of that environment without implementation of the plan or programme	Section 4
(C) Description of the environmental characteristics of areas likely to be significantly affected	Sections 4, 7 and 8
(D) Identification of any existing environmental problems which are relevant to the plan or programme, particularly those relating to European protected sites	Section 4
(E) List environmental protection objectives, established at international, EU or National level, which are relevant to the plan or programme and describe how those objectives and any environmental considerations have been taken into account when preparing the Plan	Sections 5, 7, 8 and 9
(F) Describe the likely significant effects on the environment	Sections 7 and 8
(G) Describe any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse environmental effects of implementing the plan or programme	Section 9
(H) Give an outline of the reasons for selecting the alternatives considered, and a description of how the assessment was undertaken (including any difficulties)	Sections 6, 7 and 8
(I) A description of proposed monitoring measures	Section 10
(J) A non-technical summary of the above information	Non-Technical Summary
(K) Interrelationships between each environmental topic	Addressed as it arises within each Section

Section 4 Relevant aspects of the current state of the Environment

4.1 Introduction

Reflecting the specifications in the SEA Directive, the relevant aspects of the current state of the environment for the following environmental components are identified in this section: biodiversity and flora and fauna, population and human health, soil, water, air and climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

This identification includes information that is relevant to lower tier environmental assessments and decision making (note that Article 5 of the SEA Directive, in accordance with the established European principle of subsidiarity, requires that the Environmental Report includes the information that may reasonably be required taking into account, *inter alia*, the extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment).

Bearna is a coastal village situated on the western edge of Galway City, approximately 6.5km west of the City centre and 11km east of Spiddle. The village is located along the R336, the main coastal road which connects Galway City to the Connemara Gaeltacht region to the west.

4.2 Likely Evolution of the Environment in the Absence of the Variation

Variation 2 (a) has been prepared to further contribute towards the framework for proper planning and sustainable development that is already provided for by the County Development Plan. The current Bearna Plan is due to expire. In the absence of the Variation, new developments would be examined against the existing provisions included within the County Development Plan. This situation – and associated likely evolution of the environment – most closely equates with Alternative 3

“Haphazard Development” that has been identified and considered as part of this Strategic Environmental Assessment (see Section 6 and Section 7).

4.3 Biodiversity and Flora and Fauna

4.3.1 Overview

There are various highly sensitive and designated areas within and close to the Bearna Plan area on account of the species and habitats which they contain. The closest European Sites are the Galway Bay Complex SAC (Site code: 000268) and the Inner Galway Bay SPA (Site code: 004031) which are adjacent to the Plan area.

4.3.2 Relevant aspects

Information on biodiversity and flora and fauna which is relevant to the Variation and decision making includes available information on designated ecological sites and protected species, ecological connectivity (including stepping stones and corridors) and non-designated habitats.

Ecological designations include:

- Candidate Special Areas of Conservation⁵ (cSACs) and Special Protection Areas⁶ (SPAs);

⁵ cSACs 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) by the Department of Culture, Heritage and the Gaeltacht due to their conservation value for habitats and species of importance in the European Union. The sites are *candidate* sites because they are currently under consideration by the Commission of the European Union. The Habitats Directive seeks to establish Natura 2000, a network of protected areas throughout the EU. It is the responsibility of each member state to designate SACs to protect habitats and species, which, together with the SPAs designated under the 1979 Birds Directive, form Natura 2000.

⁶ SPAs have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) - referred to as the Birds Directive - by the Department of Culture, Heritage and the Gaeltacht due to their conservation value for birds of importance in the European Union.

- Freshwater Pearl Mussel catchments⁷;
- Flora Protection Order⁸ sites;
- Wildlife Sites (including Nature Reserves⁹);
- Certain entries to the Water Framework Directive Register of Protected Areas¹⁰, including Nutrient Sensitive Rivers, Salmonid Rivers and Drinking Water Rivers;
- Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs)¹¹; and
- Wildfowl Sanctuaries (see S.I. 192 of 1979)¹².

Protected Species include:

- Annex IV (Habitats Directive) species of flora and fauna, and their key habitats (i.e. breeding sites and resting places), which are strictly protected wherever they occur, whether inside or outside the above sites, e.g. Otter and bats;

- Other species of flora and fauna and their key habitats which are protected under the Wildlife Acts, 1976-2000, wherever they occur; and
- 'Protected species and natural habitats' as defined in the European Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including: Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur) and Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur).

Specific habitats and species in specific locations are given consideration through project level planning and associated assessments.

The following information is relevant to ecological networks and connectivity and non-designated habitats:

- CORINE land cover mapping (including areas likely to contain a habitat listed in annex 1 of the Habitats Directive)¹³;
- Watercourses, wetlands and peatlands;
- The EPA's Framework National Ecological Network for Ireland¹⁴;
- Other sites of high biodiversity value or ecological importance, e.g. Bird Watch Ireland's 'Important Bird Areas' (Crowe et al., 2009); and
- Native Trees.

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites

⁷ Freshwater pearl mussel is a globally threatened, long-lived and extremely sensitive species that can be impacted by many forms of pollution, particularly sediment and nutrient pollution and by hydrological and morphological changes, which may arise from developments, activities or changes in any part of the catchment. The Republic of Ireland currently has 19 SACs designated for the pearl mussel covering 27 sub-basins. One of these sub-basins is the Munster Blackwater catchment that holds populations of freshwater pearl mussel, *Margaritifera margaritifera*.

⁸ The current list of plant species protected by Section 21 of the Wildlife Act, 1976 is set out in the Flora (Protection) Order, 1999.

⁹ A Nature Reserve is an area of importance to wildlife, which is protected under Ministerial order. There are currently 78 Statutory Nature Reserves. Most are owned by the State but some are owned by organisations or private landowners.

¹⁰ In response to the requirements of the Water Framework Directive a number of water bodies or parts of water bodies which must have extra controls on their quality by virtue of how their waters are used by wildlife have been listed on Registers of Protected Areas (RPAs). RPAs include those for Protected Habitats or Species, Shellfish, Salmonid, Nutrient Sensitive Areas, Recreational Waters and Drinking Water.

¹¹ NHAs are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. 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. NHAs are designated under the Wildlife (Amendment) Act 2000. pNHAs were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. These sites are of significance for wildlife and habitats.

¹² Wildfowl Sanctuaries are areas that have been excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed. There are 68 sanctuaries in the State. Shooting of game birds is not allowed in these sanctuaries.

¹³ The CORINE land cover mapping classifies land cover under various headings. This dataset allows for the identification of lands that are likely to be most valuable to biodiversity including those which are likely to contain a habitat listed in Annex 1 of the Habitats Directive e.g. natural grasslands, peat bogs. CORINE Land Cover (CLC) is a map of the European environmental landscape based on interpretation of satellite images. Land cover is the observed physical cover, as seen from the ground or through remote sensing, including for example natural or planted vegetation, water and human constructions which cover the earth's surface.

¹⁴ The EPA's Framework National Ecological Network provides a classification of the relative importance of areas by virtue of the biodiversity and flora that they contain and the connectivity they provide. Many of the areas identified are corridors.

so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping stones for wildlife species moving within their normal range. They are important for the migration, dispersal and genetic exchange of species of flora and fauna particularly for mammals, especially for bats and small birds and facilitate linkages both between and within designated ecological sites, the non-designated surrounding countryside and urban areas.

Article 10 of the Habitats Directive recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. The Directive requires that ecological connectivity and areas of ecological value outside the Natura 2000 network of designated ecological sites are maintained.

Ecological islands or areas of habitat that are not connected to surrounding ecologically valuable habitats can also be important.

4.3.3 Further Detail

4.3.3.1 European Sites

Figure 4.1 maps European Sites and Water Management Units within 15 km buffer of the Bearna Plan area.

The Zone of Influence of the Variation with respect to potential impacts upon ecology can be estimated to be ecology within the Plan area, waters upstream and downstream coastal waterbodies.

The Galway Bay Complex SAC comprises the inner, shallow part of the large bay which is partially sheltered by the Aran Islands. A diverse range of marine, coastal and terrestrial habitats, including several listed on Annex I of the Habitats Directive, occur within the site, making the area of high scientific importance.

The Inner Galway Bay SPA designation covers a large portion of the entire Galway Bay, including an area to the east of the Bearna. The SPA supports an excellent diversity of wintering wetland birds including divers, grebes, cormorants, dabbling duck, sea duck and waders. The inland areas to the east of Bearna covered by the SPA designation facilitate roosting with dense bracken and

heavy bramble growth providing shelter for birds. These inland areas together with the Galway Bay water body provide a plentiful supply of food for both indigenous and migratory species.

For more detail please refer to the AA Natura Impact Report, which accompanies the adopted Variation.

4.3.3.2 Natural Heritage Areas, Proposed Natural Heritage Areas and Areas likely to contain Annex I Habitats

Natural Heritage Areas, Proposed Natural Heritage Areas, Freshwater Pearl Mussel Sensitive Areas, Shellfish Areas and Water Management Units within 15 km buffer of the Bearna Plan area are mapped and listed on Figure 4.2. A local scale map of these designations together with areas that are identified as being underlain by blanket peat soil are shown on Figure 4.3.

The Moycullen Bogs NHA (Site code: 0023364) covers an area of lowland blanket bog to the west of Galway City which extends into an area to the north-west of Bearna. Several lakes and streams are contained in the site as well as large areas of wet and dry heath, fens and flushes and revegetating cutaway. One of the site's two large lakes, Lough Inch, occurs to the north-west of the Plan area. Many smaller lakes are scattered throughout the site, often with quaking margins and extensive rafts of bog mosses. The rare and protected slender cottongrass is found within an outlier of the NHA at Tonabrocky. The site supports Irish Red Data Book species Red Grouse and several additional notable species of fauna including Irish Hare, Common Frog, Snipe, Curlew, Fox, Kestrel and Lapwing.

A Habitat Study undertaken for Bearna in 2006 (see Figure 4.4) identified the following habitats as amongst the most sensitive in the Bearna and wider Bearna area: watercourses, orchid rich wet grasslands, coast, saltmarsh, heaths, blanket bog and lakes in the hinterland. The Study identified that the plan area should be considered as part of a larger ecological network with core areas comprised of the designated sites on the edges of the plan area connected by a system of wildlife corridors throughout the plan area. The Study identified that this could be managed by designating buffer zones with no development around the important habitat areas.

4.3.3.3 Land Cover Mapping

Land cover categories which indicate lands that are likely to be most valuable to biodiversity include broadleaved forests, natural grassland, moors and heathlands, transitional woodland scrub, peat bogs, stream courses and water bodies.

The CORINE (Co-ordinated Information on the Environment) land cover (CLC) data series was devised as a means of compiling geo-spatial environmental information in a standardised and comparable manner. CORINE has become a key data source for informing environmental and planning policy on a national and European level. The main land cover type in Ireland is agricultural land including forestry, which accounts for two-thirds of the national landmass. Most of this is permanent grassland pastures. Peatlands and wetlands are the second most widespread land cover type, covering almost one-fifth of the country. While forested areas cover about one-tenth of the country. Despite rapid development in the past two decades, Ireland's landscape is predominantly rural and agricultural.

CORINE Land Cover Mapping for 2012 (see Figure 4.5) indicates peat bogs to the north of the town, pastures to the east and land principally occupied by agriculture with areas of natural vegetation to the west.

4.3.4 Existing Problems

Previous changes in land uses arising from human development have resulted in a loss of biodiversity and flora and fauna however legislative objectives governing biodiversity and fauna were not identified as being conflicted with.

The Department of Culture, Heritage and the Gaeltacht Affairs Article 17 report on the Status of EU Protected Habitats and Species in Ireland (2013) identifies many Irish habitats to be of unfavourable status and many to be still declining, although it also identifies that a range of positive actions are underway. The report identifies that the majority of EU-protected species are, however, in "Favourable" status in Ireland, and stable, although a small number are considered to be in "Bad" status and continue to require concerted efforts to protect them.

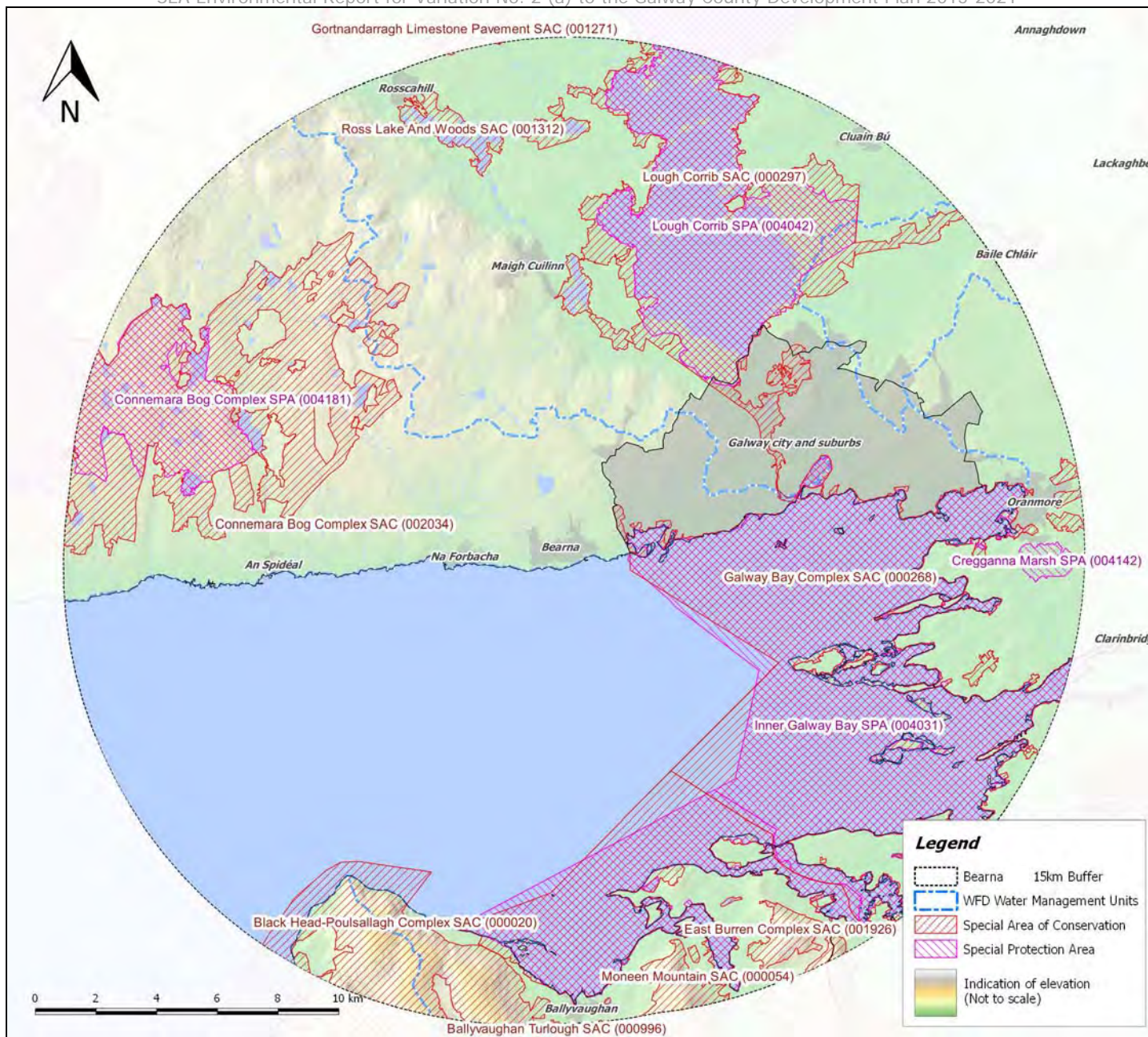


Figure 4.1 European Sites and Water Management Units within 15 km buffer of Bearna

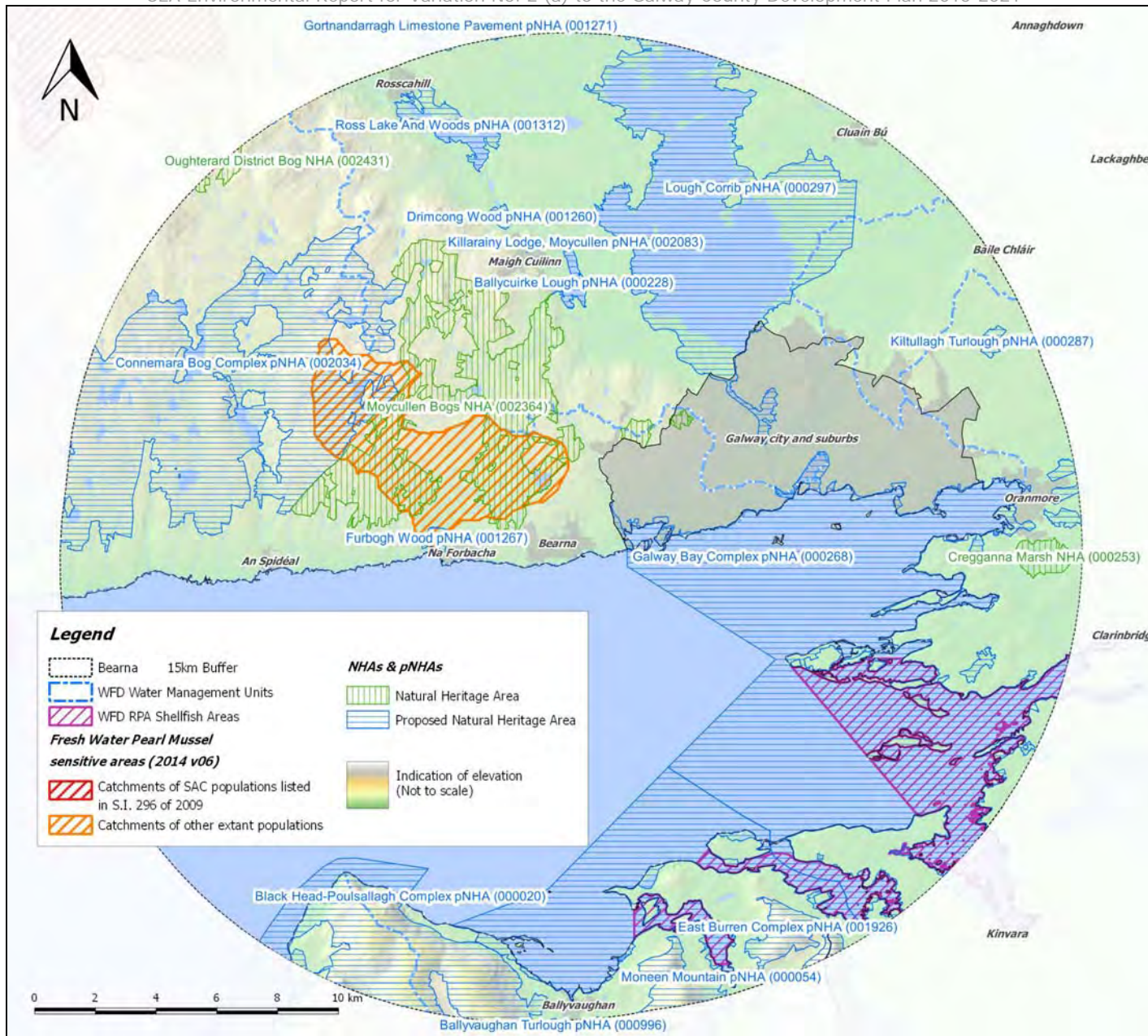


Figure 4.2 Natural Heritage Areas, Proposed Natural Heritage Areas, Freshwater Pearl Mussel Sensitive Areas, Shellfish Areas and Water Management Units within 15 km buffer of Bearna

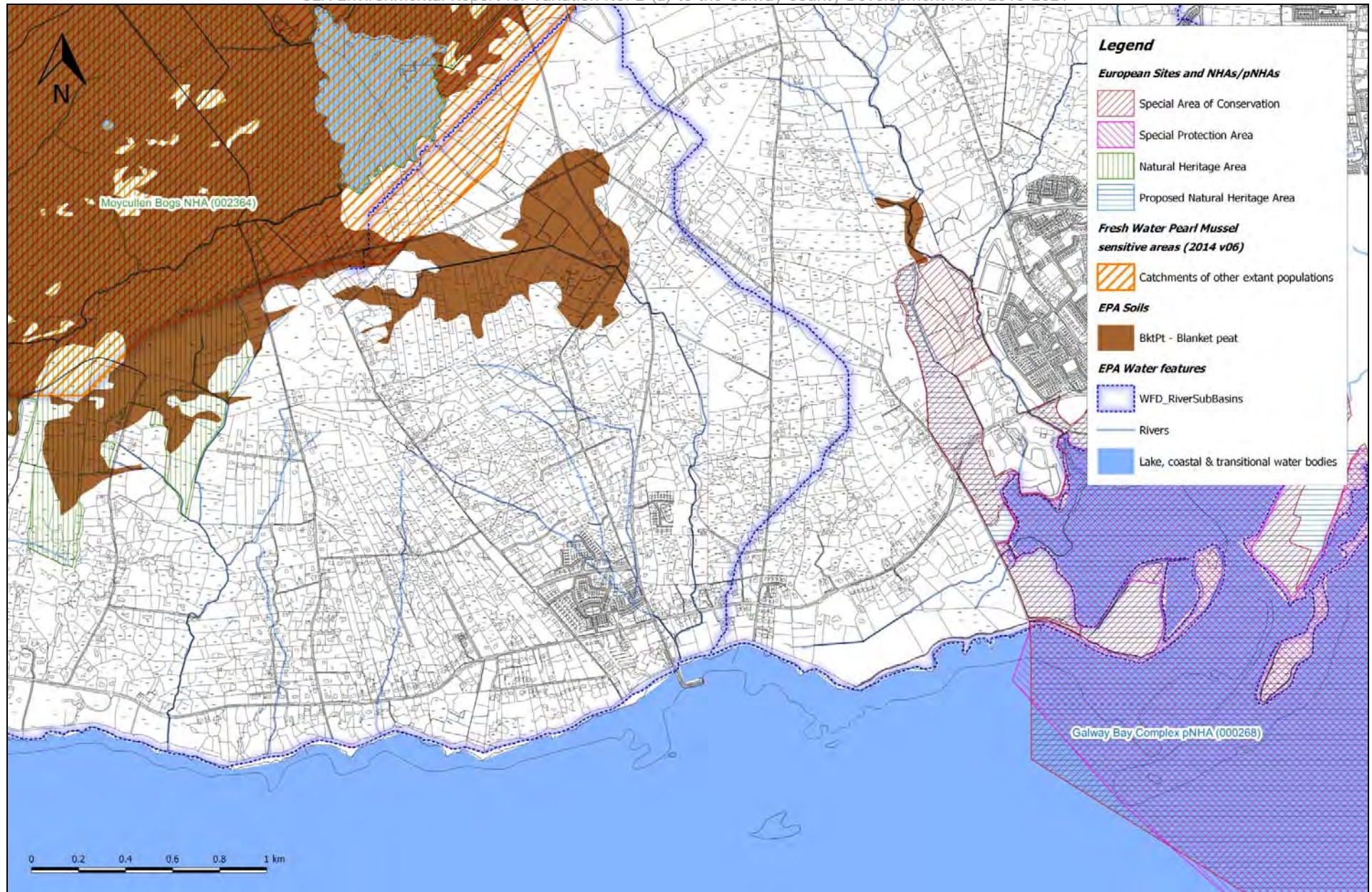


Figure 4.3 Local Map: European Sites, Natural Heritage Areas, Proposed Natural Heritage Areas, Blanket Peat Soil, Freshwater Pearl Mussel Sensitive Areas, Shellfish Areas and River Sub-Basins

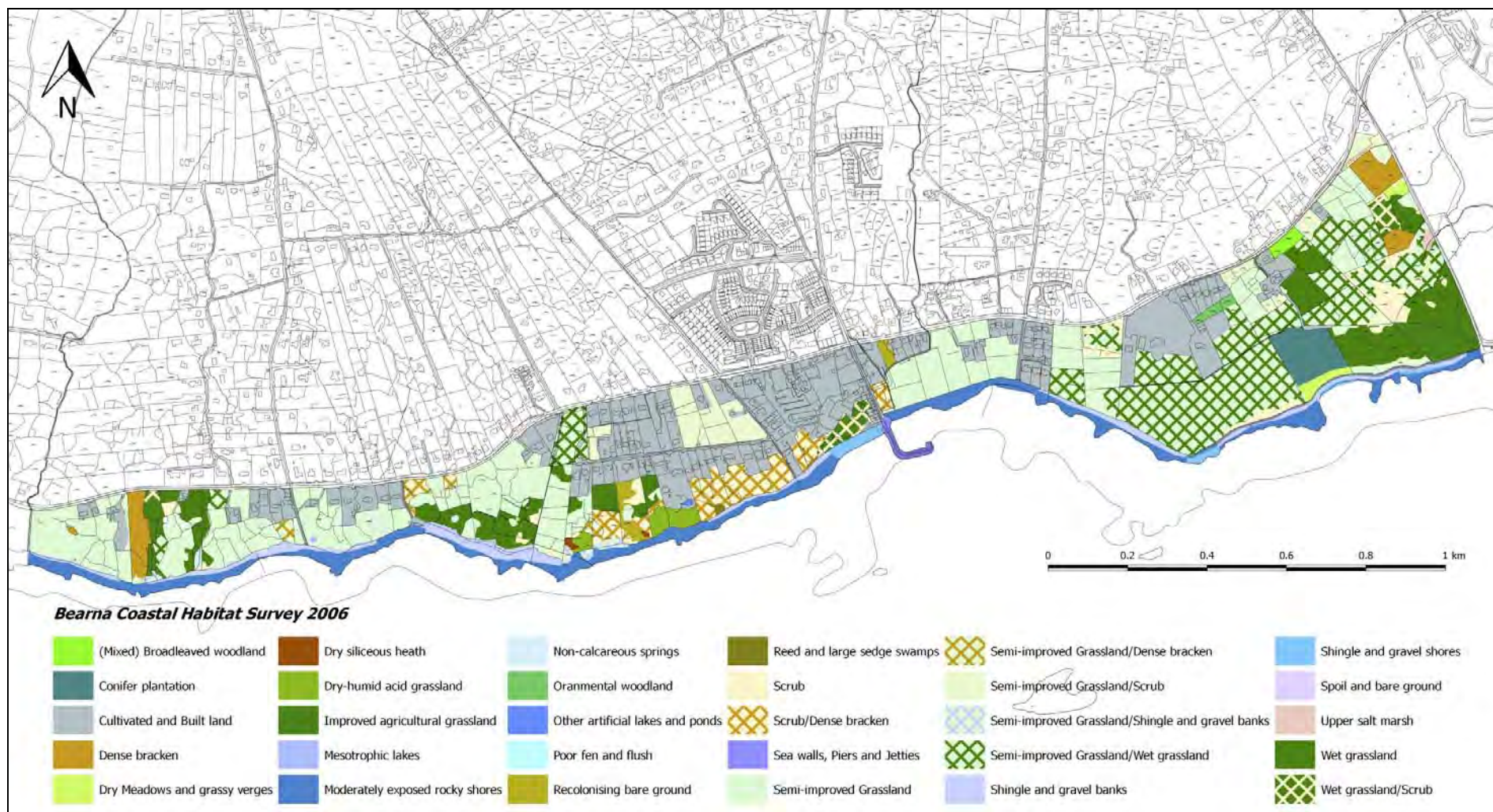


Figure 4.4 Berna Coastal Habitat Survey 2006 (Galway County Council)

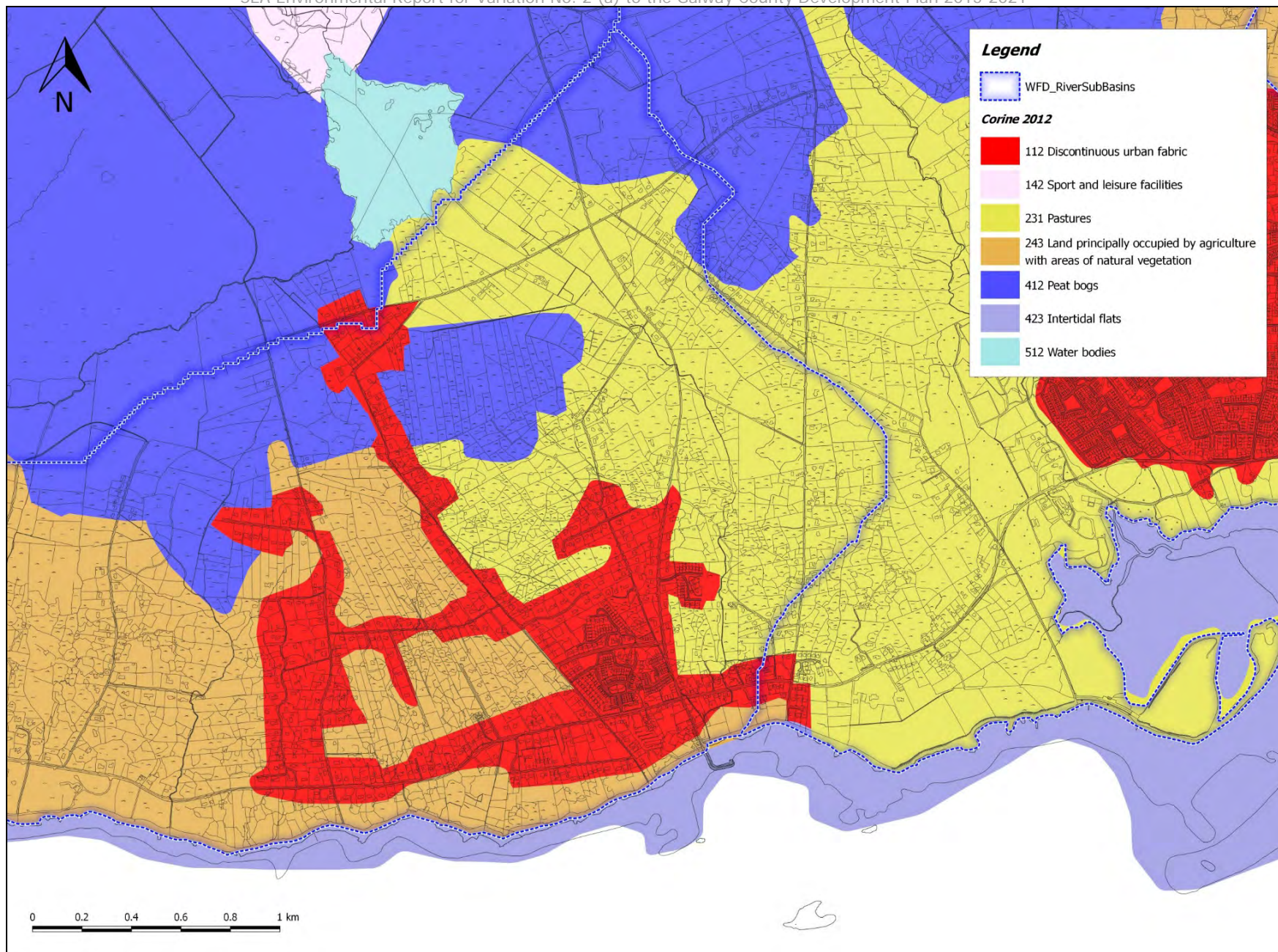


Figure 4.5 CORINE Land Cover Mapping 2012

4.4 Population and Human Health

4.4.1 Interactions

The impact of implementing Variation 2 (a) on population and human health is influenced by the impacts which the Variation will have upon 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. Population and human health has the potential to interact with issues including the following:

- Developmental and recreational pressure on habitats and landscapes;
- Increase in demand for waste water treatment at the municipal level (see Section 4.8.1.2);
- Increase in demand for water supply (see Section 4.8.1.3);
- Water quality (see Section 4.6); and
- Flood risk (see Section 4.6.6).

According to the Census 2016, the total population of Bearna village was 1,998 people, a 6.4% increase from the 2011 Census figure. While this figure relates to the Census boundary for Bearna village, the population within the Bearna Plan is in excess of 2,000 people and it is envisaged that the village will experience increased growth in the forthcoming plan period.

Emission limits for discharges to air, soil and water are set with regards to internationally recognised exposure limit values. These are generally set to be many times the safe exposure limit - in order to provide protection. In the event that a plan or programme began to have adverse health effects on surrounding populations it is likely that it would have been identified as being in breach of such emission standards at a very early stage - and long before the manifestation of any adverse health effects in the population.

4.4.2 Existing Problems

There are various water services needs in County Galway, including Bearna, which are expected to be addressed over the coming years.

4.5 Soil

Soil is the top layer of the earth's crust. It is formed by mineral particles, organic matter, water, air and living organisms. Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance. Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action.

Peat soils in the area to the north of the Plan area are shown on Figure 4.3. Peat soils are often indicative of areas that are the most sensitive to development due ecological sensitivities and impeded drainage issues.

Bearna is underlain by impermeable granite (Galway Granites) which has helped to give rise to a high water table, often occurring less than 1m below the surface, and an extensive surface water drainage network. The granite geology is overlain by soil, the depth of which is generally very shallow with rock outcrops common throughout the area. The soils found in Bearna are composed of peat as well as of shallow granite glacial tills.

Due to the shallow soil depth, the high water level and the many rock outcrops, the soils in Bearna are not suitable for intensive agricultural production however rough grazing of stock is common in a number of areas, especially on the granite glacial tills which are better drained than areas of peat soils. As well as supporting areas of low intensity agriculture, the shallow granite glacial tills to the east of the village support forestry in the Bearna Woods. Shallow soils increase the difficulty of traditional septic tank percolation systems performing properly.

Coastal erosion in Bearna has resulted in the loss of soil and rock along the shore in the past and has the potential to result in further losses in the future.

To date, there is no legislation which is specific to the protection of soil resources. However, there is currently an EU Thematic Strategy on the protection of soil which includes a proposal for a Soil Framework Directive which proposes common principles for protecting soils across the EU.

4.5.1 Radon

The greatest health risk from radiation in Ireland is caused by radon. The presence of radon gas, a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils, occurs across the country. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer. Exposure to radon for long periods or at high concentrations can lead to lung cancer.

A High Radon Area is any area where it is predicted that 10 per cent or more of homes will exceed the Reference Level of 200 Becquerel per cubic metre (Bq/m³). The Government's Building Regulations require that all new homes in High Radon Areas are installed with a radon barrier. A high radon level can be found in any home in any part of the country, but these homes are more likely to be located in High Radon Areas.

It is estimated that between 10% and 20% of homes in the Plan area are above the Reference Level. These levels are relatively normal in comparison to those experienced

elsewhere within the country (mapping available at <http://www.epa.ie/radiation/radonmap>).

Objective CC8 from the existing County Plan requires the Council to have regard to the specific guidance on radon prevention measures for new homes as contained within the Building Regulations.

4.5.2 Potentially Contaminated Lands

In the absence of mitigation, contaminated materials have the potential to adversely impact upon human health, water quality and habitats and species.

No contaminated lands within Bearna have been identified however, as is the case with other urban and semi-urban areas across the country, there is potential for contamination at sites within Bearna, especially where land uses occurred in the past in the absence of environmental protection legislation.

4.5.3 Existing Problems

Coastal erosion has resulted in the loss of soil and rock along certain stretches of the Bearna shore in the past and has the potential to result in further losses in the future.

Legislative objectives governing soil were not identified as being conflicted with.

Please also refer to Sections 4.5.1 and 4.5.2 above.

4.6 Water

4.6.1 Potential Pressures on Water Quality

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

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

A point source pressure has a recognisable and specific location at which pollution may originate. Examples of significant point source pressures include direct discharges from waste water treatment plants, licensed discharges from industrial activities, landfills, contaminated lands (e.g. disused gas works) and mines.

A diffuse source pressure unlike a point source is not restricted to an individual point or location. The source of a diffuse pressure can be quite extensive. Significant examples of diffuse pressures include runoff from forestry and agricultural lands.

Excessive abstractions from surface waters and groundwater for drinking and industrial purposes can create pressures on the ability of a water body to maintain both chemical and ecological status.

Structural alterations such as river straightening; construction of embankments, weirs, dams, port facilities and dredging can create conditions such that a water body is no longer able to support the natural ecology which would have existed prior to such modifications. These pressures are also referred to as morphological pressures.

4.6.2 Water Framework Directive

4.6.2.1 Introduction and Requirements

Since 2000, Water Management in the EU has been directed by the Water Framework

Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving *good status*. All public bodies are required to coordinate their policies and operations so as to maintain the *good status* of water bodies which are currently unpolluted and improve polluted water bodies to *good status*.

The EU's Common Implementation Strategy Guidance Document No. 20 provides guidance on exemptions to the environmental objectives of the Water Framework Directive.

Article 4 of the WFD sets out various exemptions for deterioration in status caused as a result of certain physical modifications to water bodies. This is provided: all practicable mitigation measures are taken; there are reasons of overriding public interest or the benefits to human health, safety or sustainable development outweigh the benefits in achieving the WFD objective; there are no better alternatives; and the reasons for the physical modification are explained in the relevant river basin management plan.

4.6.2.2 River Basin Districts and Water Bodies

The Water Framework Directive is implemented at River Basin Districts (RBD) level. An RBD is an area of land that is drained by a large river or number of rivers and the adjacent estuarine/coastal areas. For the first cycle of River Basin Management Plans (these are prepared for each RBD and provide specific policies for individual river basins in order to implement the requirements of the WFD) there were eight RBDs on the island of Ireland.

Within each river basin district - for the purpose of assessment, reporting and management - water has been divided into groundwater, rivers, lakes, estuarine waters and coastal waters which are in turn divided into specific, clearly defined water bodies. River basin districts are also divided into multiple sub-basins. Sub-basins are areas smaller than the districts that comprise the land from which all surface run-off flows through a series of streams, rivers and possibly, lakes to a particular point in a water

course. Sub-basins do not necessarily include coastal or estuarine waters.

Bearna Plan area is located in the Western River Basin District (WRBD), which includes parts of Clare, Galway, Galway City, Leitrim, Mayo, Roscommon and Sligo.

4.6.2.3 River Basin Management Plan

Following a review of the first cycle of RBMPs, the Department of Communications, Climate Action and Environment has determined that, in the interest of efficiency, there will be a single national approach to 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.

WFD Monitoring Programmes are undertaken in Ireland by the EPA. Overviews of the status for monitored waterbodies are published on an ongoing basis and are made available online. Up-to-date, detailed information with respect to relevant water bodies will, as is normal practice, inform lower tier project assessments and design.

4.6.3 Surface Water

4.6.3.1 Introduction

The Zone of Influence of the Plan beyond the Bearna Plan area with respect to impacts upon waters can be estimated to be all bodies of groundwater and all surface waters downstream areas of catchments¹⁵ which drain the Plan area.

4.6.3.2 WFD Surface Water Status

The WFD defines *surface water status* as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Thus, to achieve *good surface water status* both the

ecological status and the chemical status of a surface water body need to be at least *good*.

Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as of *good ecological status* when they meet Directive requirements.

Chemical Status is a pass/fail assignment with a failure defined by a face-value exceedance of an Environmental Quality Standards (EQS) for one or more Priority Action Substances (PAS) listed in Annex X of the Water Framework Directive (WFD). The EQS values for individual PAS substances are set at European level. *Good* surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the Directive.

Surface water at and around Bearna is channelled by a number of small streams which drain from north to south and discharge directly into Galway Bay: from west to east, Liberty Stream, Forramoyle West Stream, Forramoyle Beg Stream, Forramoyle More Stream, Forramoyle East Stream, Bearna House Stream, Lenarevagh Stream and Barna Stream. The Barna Stream drains part of the Galway City area, to the east of the Bearna Woods, and discharges into Rusheen Estuary.

There is a data gap relating to WFD surface water status data for certain waterbodies and these are identified as *unassigned*¹⁶ when it comes to WFD status 2010-2015. Surface water bodies within or adjacent to the wider Bearna Plan area are identified as being of *high* or *good* status.

Most of the Plan area is located within the Bearna House Stream (also referred to as Trusky Stream) River Sub-Basin with eastern parts located within the Bearna Stream River Sub-Basin. Local water quality status for the Bearna Plan area is shown on Figure 4.6. All surface waters (rivers) within the Plan area are currently identified as being of *unassigned status* – their status has yet to be determined.

Coastal waters to the south west of the Plan area (Coastal Waterbody: Outer Galway Bay) are identified as being of *high status*, coastal

¹⁵ A catchment is an area of land contributing to a waterbody, with all the water ultimately running off to a single outlet. The WFD requires water quality management to be based on natural river catchments i.e. by reference to the natural, environmental unit rather than by reference to administrative or legal boundaries, which often fragment river catchments.

¹⁶ Ecological status is not assigned and the term *unassigned status* applies in respect of these waterbodies.

waters to the south-east of the Plan area (Coastal Waterbody: Inner Galway Bay North) are identified as being of *good status*.

The beach at Silverstrand holds a Blue Flag, an award given to beaches and marinas with excellent environmental management, and is identified as having Excellent Water Quality.

4.6.4 Ground Water

4.6.4.1 Introduction

Groundwater is stored in the void spaces in underground layers of rock, or aquifers. These aquifers are permeable, allowing both the infiltration of water from the soils above them and the yielding of water to surface and coastal waters. Groundwater is the part of the subsurface water that is in the saturated zone - the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water.

4.6.4.2 WFD Groundwater Status

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either *good* or *poor*. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status.

The WFD status (2010-2015) of all groundwater underlying the Bearna Plan area and is identified as being of *good status*, meeting the objectives of the WFD.

4.6.4.3 Aquifer Vulnerability and Productivity

The Geological Survey of Ireland (GSI) rates the rocks, or aquifers, that contain groundwater according to both their vulnerability to pollution and their productivity.

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Aquifer vulnerability is based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of karst features. Groundwater is most at risk where

the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes¹⁷.

Most aquifers underlying Bearna are identified as having *extreme, extreme (rock near surface)* or *high* vulnerability (see Figure 4.7).

The GSI rates aquifers based on aquifer productivity - hydrogeological characteristics and the value of the groundwater resource. Ireland's entire land surface is divided into nine aquifer productivity classifications that encompass various types of regionally, locally important and poor aquifers. The aquifer underlying Bearna is classified as poor (generally unproductive except in local zones). Bearna and its surrounding areas are located over a relatively impermeable aquifer which has helped to give rise to a high water table, often occurring less than 1m below the surface.

4.6.4.4 Source Protections Areas

Source Protection Area delineation provides an assessment of the land area that contributes groundwater to a borehole or spring. Source reports have been undertaken by the GSI on behalf of Local Authorities since the mid-1990s. Since then, more than 120 have been completed. There is no Source Protection Area located within or in vicinity of the Plan area.

4.6.5 WFD Registers of Protected Areas

The WFD requires that Registers of Protected Areas (RPAs) are compiled for a number of water bodies or part of water bodies which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife. The WFD requires that these RPAs contain: areas from which waters are taken for public or private water supply schemes; designated shellfish production areas; bathing waters; areas which are affected by high levels of substances most commonly found in fertilizers, animal and human wastes - these areas are considered nutrient sensitive; areas designated for the protection of habitats or species e.g. Salmonid areas; Special Areas of Conservation (SACs); and, Special Protection Areas (SPAs).

¹⁷ Source: Geological Survey of Ireland (2014) Metadata

Entries to the RPAs relevant to Bearna include:

- The water bodies within and surrounding the Bearna Plan area supporting Special Areas of Conservation (SACs) and Special Protection Areas (SPAs); and
- Groundwater for drinking water underlying the Bearna Plan area.

4.6.6 Flooding

The most significant source of flood risk within the Plan area is from fluvial (from rivers/streams) and coastal sources however there are other sources of flooding present including those from pluvial (from rainwater) and surface drainage systems.

Flooding is an environmental phenomenon which, as well as causing economic and social impacts, could in certain circumstances pose a risk to human health. The existence of flood risk within Bearna has been detailed in the Strategic Flood Risk Assessment (SFRA) that has been undertaken alongside and informed the Draft Plan. The SFRA has facilitated the integration of certain flood risk management considerations into the Plan. However, certain Material Alterations were made to Proposed Variation and adopted by the Elected Members as part of the adopted Variation. These Material Alterations provide for a range of incompatible uses within areas that are at elevated risk of flooding and are contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*. Consequently the Variation is contrary to these Guidelines and associated Circular.

Zones of elevated fluvial and coastal flood risk that were identified by the SFRA are shown on Figure 4.8. There are three types or levels of flood zones defined for the purposes of the Flood Guidelines:

- Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding);
- Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year

and 0.5% or 1 in 200 for coastal flooding); and

- Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all other areas that are not in zones A or B.

4.6.7 Existing Problems

Zones of elevated fluvial and coastal flood risk have been identified within the Plan area.

Coastal erosion has resulted in the loss of soil and rock along certain stretches of the Bearna shore in the past and has the potential to result in further losses in the future. Inundation caused by rising sea levels would result in the loss of land together with any developments, infrastructure or habitats located on such lands.

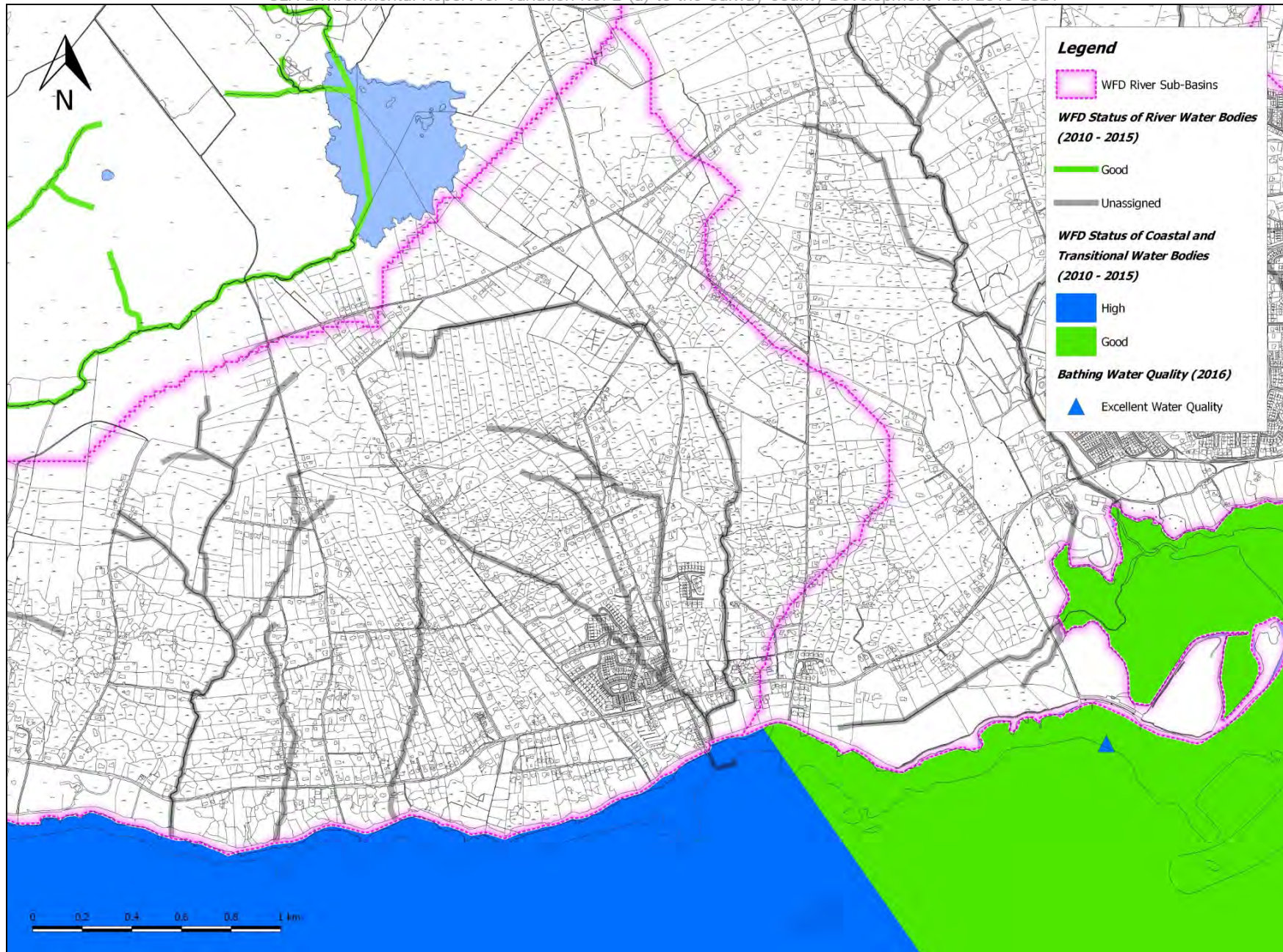


Figure 4.6 Available information on Water Quality Status (2010-2015) for Surface Water Bodies

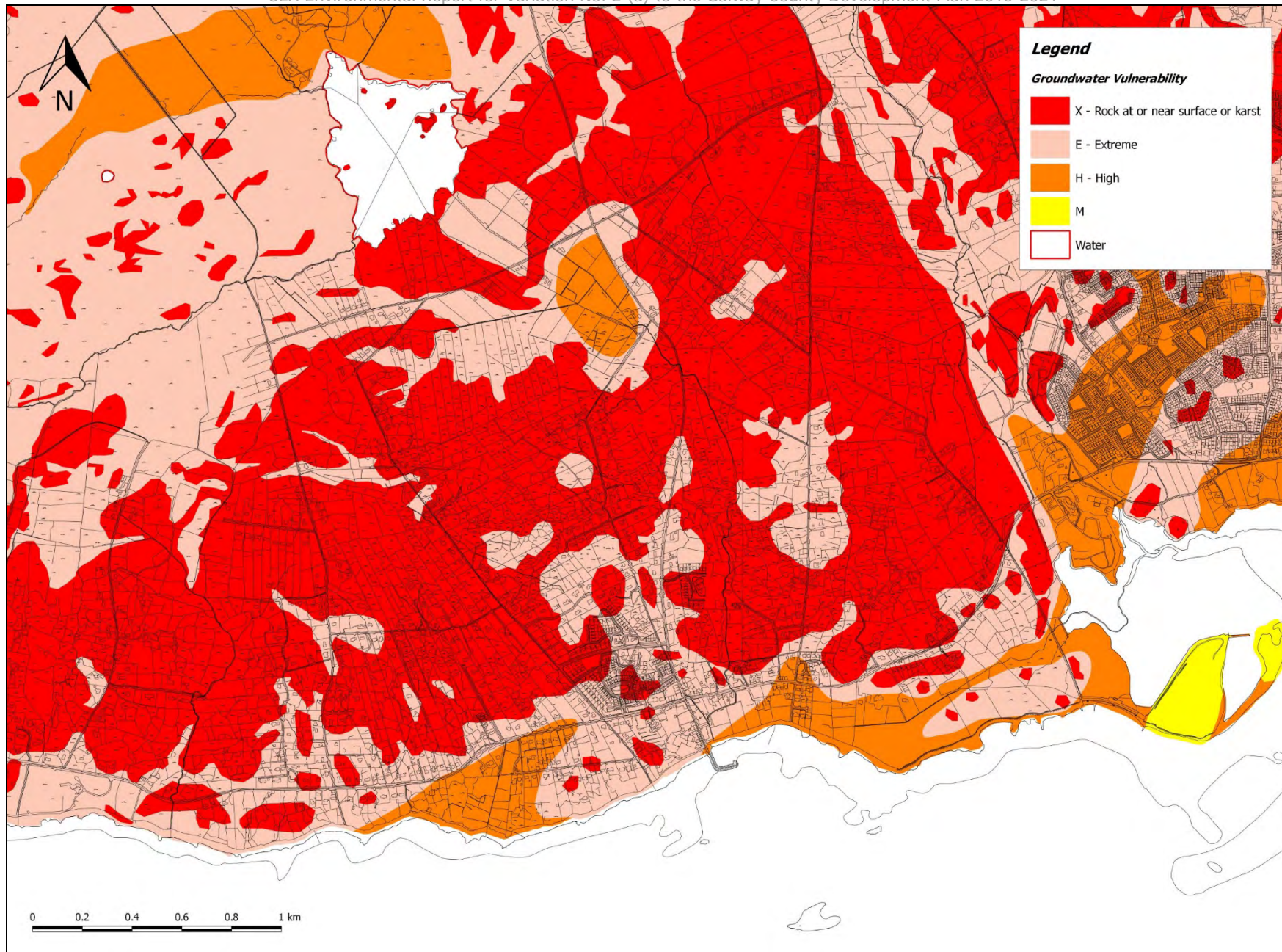


Figure 4.7 Groundwater Vulnerability

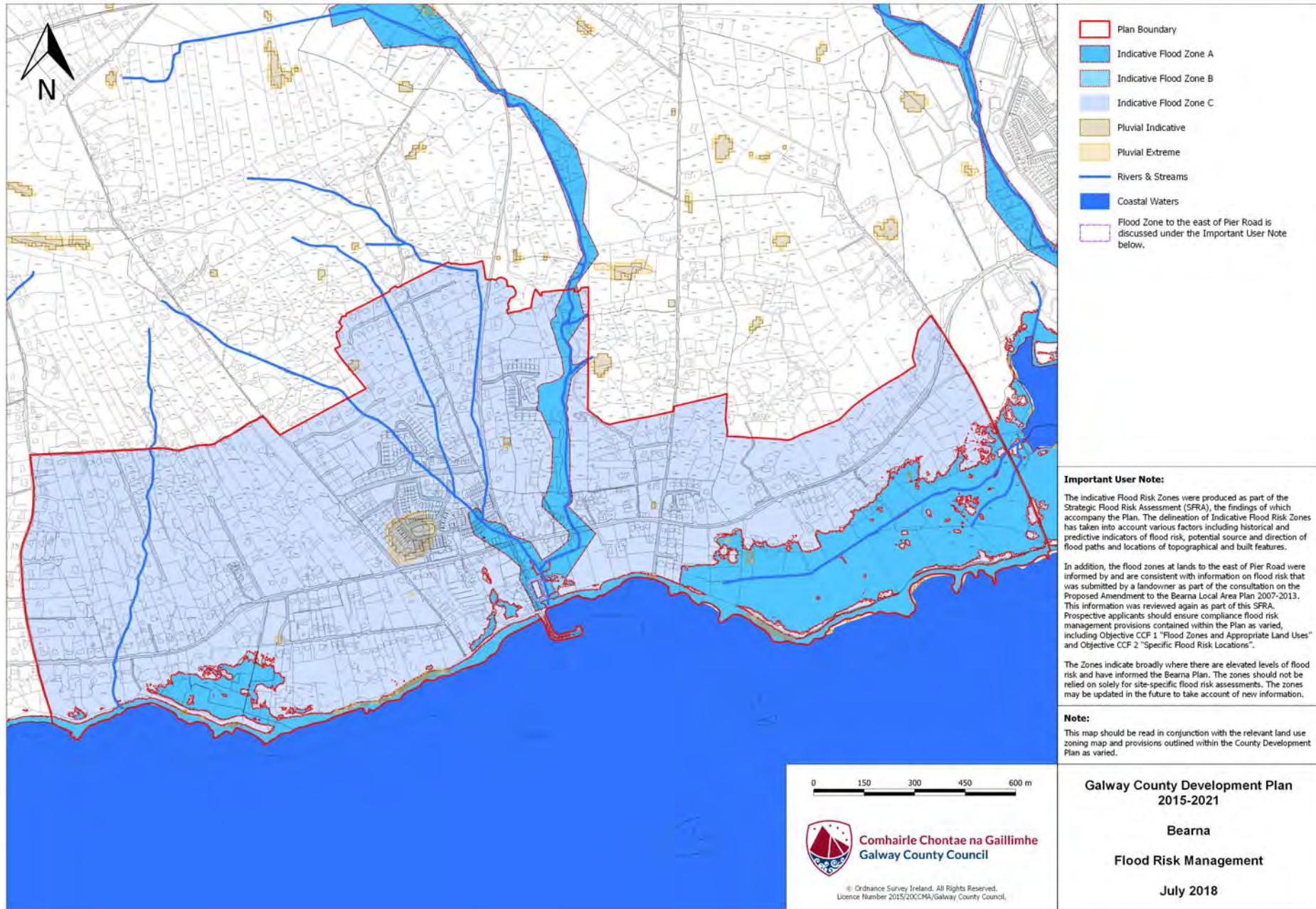


Figure 4.8 Flood Zones (fluvial and coastal)

4.7 Air and Climatic Factors

4.7.1 Climatic Factors

The key issue involving the assessment of the effects of implementing the Variation on climatic factors relates to greenhouse gas emissions arising from transport. Interactions are also present with flooding (see Section 4.6.6) and these are covered in greater detail in the Strategic Flood Risk Assessment that also accompanies the Variation.

The Variation contributes towards improvements in sustainable mobility, thereby facilitating reductions in and limiting increases of greenhouse gas emissions. Such emissions would occur otherwise with higher levels of motorised transport and associated traffic. This is particularly relevant through the accommodation of new development, including consolidation, within Bearna. Land-use planning contributes to what number and what extent of journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility, noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development – and its associated impacts – can be minimised and the cost of service provision can be reduced.

Flooding - see Section 4.6.6 - is influenced by climatic factors.

Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998. Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (42.2% of Total Final Energy Consumption in Ireland in 2015 was taken up by transport, the largest take up of any sector)¹⁸.

For 2015, total national greenhouse gas emissions are estimated to be 3.7% higher than emissions in 2014. This follows the 0.3%

decrease in emissions reported for 2014, most likely attributable to a mild winter in that year. Emission reductions have been recorded in 8 of the last 10 years, however this has largely been as a result of reduced economic activity. There is now strong evidence that emissions are once again increasing in line with economic and employment growth, particularly in the Transport sector. Greenhouse gas emissions from the Transport sector increased by 4.2% in 2015. This is the third successive year of increases in transport emission. Greenhouse gas emissions in 1990 and 2015 by sector show a more than doubling of the proportion of emissions from the Transport sector, from 9.2% in 1990 to 19.8% in 2015¹⁹.

The EPA 2017 publication *Ireland's Greenhouse Gas Emission Projections 2016-2035* provides an assessment of Ireland's progress towards achieving its emission reduction targets set down under the EU Effort Sharing Decision (Decision No 406/2009/EC) for the years 2013-2020 and a longer term assessment based on current projections. Ireland's 2020 target is to achieve a 20% reduction of non-Emission Trading Scheme (non-ETS) sector emissions (i.e. agriculture, transport, the built environment, waste and non-energy intensive industry) on 2005 levels with annual limits set for each year over the period 2013-2020. The EPA has produced two scenarios in preparing greenhouse gas emission projections; a "With Existing Measures" scenario and a "With Additional Measures" scenario. For 2017 projections, the With Additional Measures scenario takes into account an expected shortfall in achieving full energy efficiency targets and renewable targets for electricity, transport and heat as set out in the National Energy Efficiency Action Plan and National Renewable Energy Action Plan. To assess progress towards achieving reduction targets out to 2020 the EPA is using legislative limits (for the period 2013-2016) and estimated annual limits (for the period 2017-2020) which will possibly be included in a European Commission proposal that takes into account methodological changes underpinning greenhouse gas emission inventories. The 2017 publication identifies that:

- For 2020 it is estimated that non-ETS sector emissions are projected to be 4% - 6% below 2005 levels by 2020.

¹⁸ Sustainable Energy Ireland (2016) *Energy in Ireland 1990 - 2015*

¹⁹ EPA (2017) *Ireland's Greenhouse Gas Emissions in 2015*

This compares to the target of 20% below 2005 levels by 2020.

- To determine compliance under the Effort Sharing Decision, any overachievement of the binding emission limit in a particular year (in the period 2013 to 2020) can be banked and used towards compliance in a future year. Under both scenarios Ireland is expected to exceed the annual limit in 2016.
- Under the With Existing Measures scenario, Ireland is projected to cumulatively exceed its obligations by 13.7 Mt of CO_{2eq} over the period 2013-2020. Under the With Additional Measures scenario, Ireland is projected to cumulatively exceed its obligations by 11.5 Mt of CO_{2eq} over the period 2013-2020. This takes into account the overachievement of the annual limits in the period 2013-2015 which is banked and used in the years 2016-2020. Using this mechanism Ireland is projected to cumulatively exceed its obligations in 2019.
- Agriculture and transport dominate non-ETS sector emissions; emission trends from these sectors will be key determinants in terms of meeting targets with both projected to increase in the period to 2020.

There will be new obligations (as yet undefined) for the years 2021-2030. Based on current emission projections, it is estimated that by 2030 total non-ETS emissions will be 1%-3% below 2005 levels. The estimates of greenhouse gas emissions to 2035 assume a continuation of the effect of policies and measures that are in place in 2020.

The first National Mitigation Plan 2017, prepared by the Department of Communications, Climate Action and Environment, represents an initial step to set Ireland on a pathway to achieve the level of decarbonisation required. It is a whole-of-Government Plan, reflecting in particular the central roles of the key Ministers responsible for the sectors covered by the Plan – Electricity Generation, the Built Environment, Transport and Agriculture, as well as drawing on the perspectives and responsibilities of a range of other Government Departments.

The 2018 National Adaptation Framework sets out the national strategy to reduce the vulnerability of the country to the negative

effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation. Under the Framework a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for.

4.7.2 Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

The principles to this European approach are set out in the Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) (which replaces the earlier Air Quality Framework Directive 1996 and the first, second and third *Daughter Directives*; the fourth *Daughter Directive* will be included in CAFE at a later stage).

The CAFE Directive:

- Sets new air quality objectives for PM_{2.5} (fine particles) including the limit value and exposure related objectives;
- Accounts for the possibility to discount natural sources of pollution when assessing compliance against limit values; and
- Allows the possibility for time extensions of three years (PM₁₀) or up to five years (NO₂, benzene) for complying with limit values, based on conditions and the assessment by the European Commission.

The fourth Daughter Directive lists pollutants, target values and monitoring requirements for the following: arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.

The CAFE Directive was transposed into Irish legislation by the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011). It replaces the Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002), the Ozone in

Ambient Air Regulations 2004 (S.I. No. 53 of 2004) and S.I. No. 33 of 1999.

The fourth Daughter Directive was transposed into Irish legislation by the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009 (S.I. No. 58 of 2009).

In order to apply with European Directives relating to air quality, the EPA manages the National Ambient Air Quality Network and measures the levels of a number of atmospheric pollutants at locations across the country. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002). The main areas defined in each zone are:

- Zone A: Dublin Conurbation.
- Zone B: Cork Conurbation.
- Zone C: Other cities and large towns including Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise.
- Zone D: Rural Ireland, i.e. the remainder of the State – small towns and rural areas of the country – excluding Zones A, B and C.

The Mace Head air quality monitoring site is located within the Gaeltacht area. The Bodkin Roundabout air quality monitoring site is located close to Bearna in Galway City. The current air quality at these sites is identified by the EPA as being *good*²⁰.

The EPA's (2017) *Air Quality in Ireland 2016* identifies that:

- No levels above the EU limit value were recorded at any of the ambient air quality network monitoring sites in Ireland in 2016;
- WHO guideline values were exceeded at a number of monitoring sites for particulate matter (PM₁₀ and PM_{2.5}), ozone, SO₂ and NO₂; and
- 2016 dioxin survey shows that concentrations of dioxins and similar pollutants remain at a consistently low level in the Irish environment.

With regard to challenges, the report identifies that maintaining our standard of air quality in Ireland is a growing challenge. Overcoming this challenge is taking on an increased importance with the further understanding of the links between poor air quality and human health. The European Environment Agency (EEA) have estimated a figure of 1,510 premature deaths in Ireland in 2014 (EEA 2017) directly attributable to air quality, with the predominant culprit being fine particulate matter (PM_{2.5}) from the use of solid fuels such as wood, coal and peat for home heating. It is becoming increasingly apparent that there is no safe level of air pollution, a position that is held by the WHO and is reflected in their much stricter (than EU limit values) air quality guideline values. The clear benefits in terms of health improvements of reducing the people's exposure to poor air quality is also supported by significant economic savings in doing so. This is highlighted by the Organisation for Economic Co-operation and Development's (OECD) report on the economic cost of air pollution (OECD 2016).

With regards to solutions, the report identifies the following that the implementation of the new Ambient Air Quality Monitoring Programme (AAMP) by the EPA will be key to tackling the issues surrounding air quality in Ireland. The two key sectors that predominantly impact negatively on air quality are residential heating and transport. The AAMP seeks to address these key issues by firstly informing the public on the status of air quality in Ireland. This will be achieved through an expansion of the monitoring network with a greater emphasis on provision of real-time particulate matter levels. In conjunction with this network expansion, the AAMP will implement a programme of citizen engagement which will be used to highlight the links between air quality, health and the actions or clean air choices that can be taken by citizens to directly impact and improve their local air quality. Namely these are:

- Any shift from the burning of solid fuel to cleaner, more energy efficient methods of home heating which will result in cleaner air quality for the consumer, their family and neighbours with a resultant improvement in their health.
- A transition in our modes of transport away from the use of the private diesel and petrol powered motor cars to alternative modes of transport such

²⁰ 17/08/2017 (<http://www.epa.ie/air/quality/>)

as walking, cycling and forms of transport that are environmentally friendly and sustainable such as electric motor powered vehicles. This is especially important in our at-risk urban environments.

To incentivise and compliment these behavioural changes in the public, the report identifies that it is imperative that Ireland adopts policy solutions that can marry the twin issues of ambient air quality and climate change mitigation. The government's 'Clean Air Strategy' which is due for publication should point the way forward in terms of policy solutions for Ireland in this regard.

4.7.3 Existing Problems

Legislative objectives governing air and climatic factors were not identified as being conflicted within Bearna however there are national targets regarding greenhouse gas emissions and air quality that are in danger of not being met.

4.8 Material Assets

4.8.1 Water Services

4.8.1.1 Irish Water

Since January 2014, Irish Water is the State body responsible for the delivery, integration and implementation of strategic water and waste water projects and infrastructural improvements. Galway County Council no longer has a direct role in this area, however the Council works with Irish Water to help to ensure that the land use plans and water services investment plans align.

The function and role of Irish Water includes:

- Abstracting and treating water;
- Delivering water and waste water services to homes and businesses;
- Installing water meters and billing domestic and business customers;
- Raising finance to fund improvements and repairs in the water system; and
- Maintaining and operating the water system.

The upgrading of infrastructure will contribute towards compliance with the Water Framework Directive, EU Urban Waste Water Treatment Directive and Drinking Water

Regulations and will help to protect human health and maintain the quality of surface and ground waters.

4.8.1.2 Waste Water Services Demand and Capacity Information

The EPA's 2017 report '*Urban Waste Water Treatment in 2016*' identified that:

- Waste water treatment at 50 of Ireland's 185 large urban areas did not meet relevant standards and improvements are needed at 148 urban areas;
- Raw sewage is released into the environment from 44 urban areas; and
- Significant capital investment to upgrade deficient waste water treatment systems is required to comply with EU standards, improve water quality, and prevent pollution of rivers, lakes and bathing water and to protect shellfish and pearl mussel habitats.

Based on the EPA's assessment of monitoring information provided by Irish Water and the enforcement activities carried out by the EPA, this report identifies urban areas with the most important environmental issues that must be addressed. There are 14 urban areas in County Galway listed currently as priority areas, where improvements are required to resolve urgent environmental issues.

The waste water facility in Bearna currently operates at limited capacity, with waste water being pumped from Bearna to Mutton Island²¹.

4.8.1.3 Drinking Water

Drinking water must be clean and wholesome. That means it must meet the relevant water quality standards and must not contain any other substance or micro-organism in concentrations or numbers that constitute a potential danger to human health.

Compliance with the drinking water requirements is determined by comparing the results of analyses submitted by water suppliers to the standard for 48 parameters specified in the European Communities (Drinking Water) Regulations (No. 2), 2007. To ensure that these standards are met, each

²¹ *Indicative Infrastructure Capacity for Core Strategy Settlements*, Feb. 2017, Galway County Council

water supply must be monitored on a regular basis.

Under Section 58 of the Environmental Protection Agency (EPA) Act 1992 the EPA is required to collect and verify monitoring results for all water supplies in Ireland covered by the European Communities (Drinking Water) Regulations, 2000. The EPA publishes their results in annual reports which are supported by Remedial Action Lists (RALs). The RAL identifies water supplies which are not in compliance with the Regulations mentioned above. The RAL Q3 of 2017 lists three water supply schemes in County Galway (Ballinasloe, Inishmean and Williamstown water supplies) for elevated levels of THMs above the standard in the Drinking Water Regulations. Drinking water supply scheme in Bearna is not listed on the current RAL.

The drinking water facility for Bearna operates at limited capacity²². It is proposed to extend the City water supply to serve west of the city as far as Lettermore. The planned Galway West Regional Water Supply Scheme (RWSS) is currently at planning phase.

4.8.2 Waste Management

For the purposes of waste management planning, Ireland is now divided into three regions: Southern, Eastern-Midlands and Connacht-Ulster. Waste management plans for the three regions came into force in 2015. Galway is subject to the Connacht Ulster Waste Management Plan 2015-2021.

The EPA publishes data on waste generation and management in the National Waste Report and bulletins. The most recent National Waste Report was published in August 2014, reporting waste information for 2012, identified that in 2012, Ireland achieved all its EU obligations across a broad range of waste legislation.

4.8.3 Existing Problems

Continued development within Bearna will need to continue to be accompanied by appropriate levels of waste water and drinking water services.

²² *Indicative Infrastructure Capacity for Core Strategy Settlements*, Feb. 2017, Galway County Council

4.9 Cultural Heritage

4.9.1 Archaeological Heritage

4.9.1.1 Introduction

Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. Archaeological heritage consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence. As archaeological heritage can be used to gain knowledge and understanding of the past it is of great cultural and scientific importance.

Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological deposits and underwater features.

Archaeological sites may have no visible surface features; the surface features of an archaeological site may have decayed completely or been deliberately removed but archaeological deposits and features may survive beneath the surface.

Archaeological heritage is protected under various legislation including the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts.

4.9.1.2 Record of Monuments and Places

The National Monument Acts 1930-2004 are the primary legislative framework for the protection of archaeological heritage in Ireland. Through the definition of monuments, historic monuments, and national monuments a wide range of structures and features fall under the remit of these Acts.

The Record of Monuments and Places (RMP) was established under Section 12 of the National Monuments (Amendment) Act 1994 and structures, features, objects or sites listed in this Record are known as Recorded Monuments. The term Monument refers to any artificial or partly artificial building or structure, that has been carved, sculptured or worked upon or which appears to have been purposely put or arranged in position. It also includes

any, or part of any prehistoric or ancient tomb, grave or burial deposit, or ritual, industrial or habitation site. Monuments that predate 1700 AD are automatically accorded the title Historic Monument. A 'National Monument' is defined in the National Monuments Acts (1930-2004) as a monument or the remains of a monument, the preservation of which is of national importance by reason of the historical, archaeological, traditional, artistic or architectural interest.

As well as extending protection to all known sites, now identified as Recorded Monuments, the National Monuments Acts 1930 – 2004 extends protection to all previously unknown archaeological items and sites that are uncovered through ground disturbance or the accidental discovery of sites located underwater. Where necessary, the Minister with responsibility for Heritage will issue preservation orders to ensure protection is afforded to sites believed to be under threat.

Monuments within and surrounding Bearna and associated zones of notification, where available, are identified on Figure 4.9.

There are various entries to the RMP within and around Bearna (see Figure 4.9 providing evidence of early settlement including: a Cenotaph located along a public road approximately 2km to the north of the main village crossroads; a Graveyard, located along pier road in the village centre, a Church and a Holy Well, both of which are located along Silver Strand Road. This archaeological legacy helps to provide an understanding of past societies that inhabited Bearna through an examination of the material remains left by those societies and the evidence of their environment.

4.9.2 Architectural Heritage

4.9.2.1 Introduction

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning all: structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest.

4.9.2.2 Protected Structures

Part IV of the Planning and Development Act requires every development plan to include a Record of Protected Structures (RPS). A 'protected structure' is a structure or a specific feature of the structure as may be specified that a Planning Authority considers to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

The placing of a structure on the RPS seeks to ensure that the character and interest of the structure is maintained and any changes or alterations to it are carried out in such a way as to retain and enhance that character and interest. The inclusion of a structure in the RPS confers certain responsibilities upon the owner of the structure and requires that planning permission be sought for any changes or alterations to the structure. The definition of a 'structure' or 'a specified part of a structure' for the purpose of the RPS includes "the interior of the structure; the land lying within the curtilage of the structure; any other structures lying within the curtilage of that structure and their interiors; and all fixtures and features which form part of the interior or exterior of the structure". From the date of notification of an intention to include a structure in the RPS, the owner has a duty to protect that structure from endangerment. The Council may, on receipt of a written request from the owner or occupier of a protected structure, issue a declaration under Section 57 of the Planning and Development Act 2000 (as amended), outlining certain works it considers would not materially affect the character and interest of the protected structure and which are, therefore, exempted from the requirement for planning permission. Any works that would materially affect the character and interest of a structure require planning permission. In general works to a protected structure should comply with the guidelines as set out in the Architectural Heritage Protection Guidelines from the Department.

There are various RPS entries within and around Bearna (see Figure 4.9) including: Bearna Pier, Lynch Monument, and Seapoint-Thatched Cottage and Fr. Griffin Memorial.

4.9.2.3 Architectural Conservation Areas

In accordance with Section 81 of the Planning and Development Act, Development Plans are required to include an objective to preserve the character of a place, area, group of structures or townscape, taking account of building lines and heights, that:

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

if the Planning Authority is of the opinion that its inclusion is necessary for the preservation of the character of the place, area, group of structures or townscape concerned and any such place, area, group of structures or townscape shall be known as an "Architectural Conservation Area" (ACA).

An ACA may or may not include Protected Structures. In an ACA, protection is placed on the external appearance of such areas or structures.

There is currently one ACA within Bearna: Bearna Pier Road (see Figure 4.9).

4.9.3 Existing Problems

The context of archaeological and architectural heritage has changed over time however no existing conflicts with legislative objectives governing archaeological and architectural heritage have been identified.

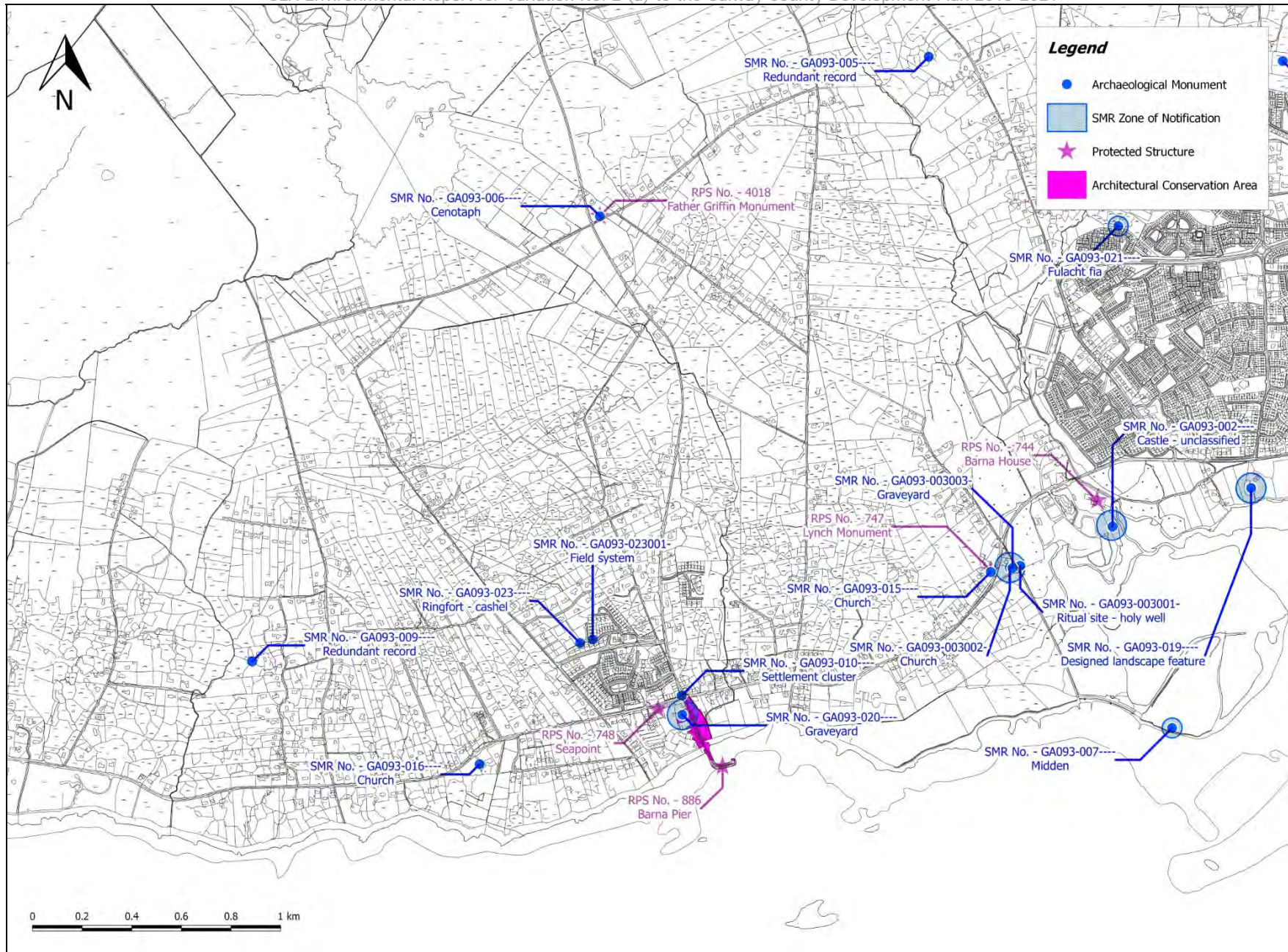


Figure 4.9 Archaeological and Architectural Designations

4.10 Landscape

4.10.1 Introduction

Landscapes are areas which are perceived by people and are made up of a number of layers: landform, which results from geological and geomorphological history; landcover, which includes vegetation, water, human settlements, and; human values which are a result of historical, cultural, religious and other understandings and interactions with landform and landcover.

Bearna and its surrounding area encompasses various landscape and amenity features such as peatlands, scrublands and the shoreline, Bearna Pier and a series of small beaches, including Mag's Boreen Beach.

4.10.2 Legislation

The importance of landscape and visual amenity and the role of its protection are recognised in the Planning and Development Act 2000 as amended, which requires that Development Plans include objectives for the preservation of the landscape, views and the amenities of places and features of natural beauty.

4.10.3 Landscape Sensitivities and Focal Points/Views

The Landscape Character Assessment for County Galway (2003) identifies Landscape Character Areas, classifies landscapes in Galway according to their sensitivity (their ability to accommodate change or intervention without suffering unacceptable effects to character and values) and values and identifies focal points/views.

Focal points/views include those of key heritage sites and along scenic tourism routes. Such listed views will inform lower tier project assessments and design. Bearna is identified as forming part of the South Foothills of East Connemara Landscape Character Area.

The following five sensitivity classes were established by the Landscape Character Assessment:

- Class 1 – Low sensitivity;
- Class 2 – Moderate sensitivity;

- Class 3 – High sensitivity;
- Class 4 – Special; and,
- Class 5 – Unique.

The most sensitive landscapes are 'Class 5 - Unique', 'Class 4 - Special' and 'Class 3 - High sensitivity' while landscapes of lesser sensitivity are 'Class 2 - Moderate sensitivity' and 'Class 1 - Low sensitivity'. The sensitivity of a landscape to development and therefore to change will vary according to its character and to the importance which is attached to any combination of landscape values. The landscape at An Bearna (see Figure 4.10) is generally classified as being of Moderate Sensitivity (Class 2), High Sensitivity (Class 3) at the coastal areas and with Rusheen Estuary identified as being of Special Sensitivity (Class 4).

Landscape value refers to why we attach importance to landscape. Landscapes may be valued because they are in good condition, have scenic characteristics or express important ecological, cultural or heritage interests. An assessment of landscape value allows the comparison of two landscapes of the same type, but also comparison of two landscapes of different types, as the same value criteria are applicable between landscapes of different types. Landscape value in the Bearna Plan area is classified as being of high value at the coastal areas and medium value elsewhere (as shown on Figure 4.11).

There are 4 focal points/views located within or close to Bearna Plan area (as listed below and shown on Figure 4.12):

- View 73: View of Lough Inch from local third class roads
- View 74: View of North Clare Coast
- View 72: View of sea from north of Bearna
- View 71: View of headland Illaunafamona

4.10.4 Existing Problems

Primary and subsequent ecological succession and new developments have resulted in changes to the visual appearance of landscapes within County Galway overtime however legislative objectives governing landscape and visual appearance were not identified as being conflicted with.

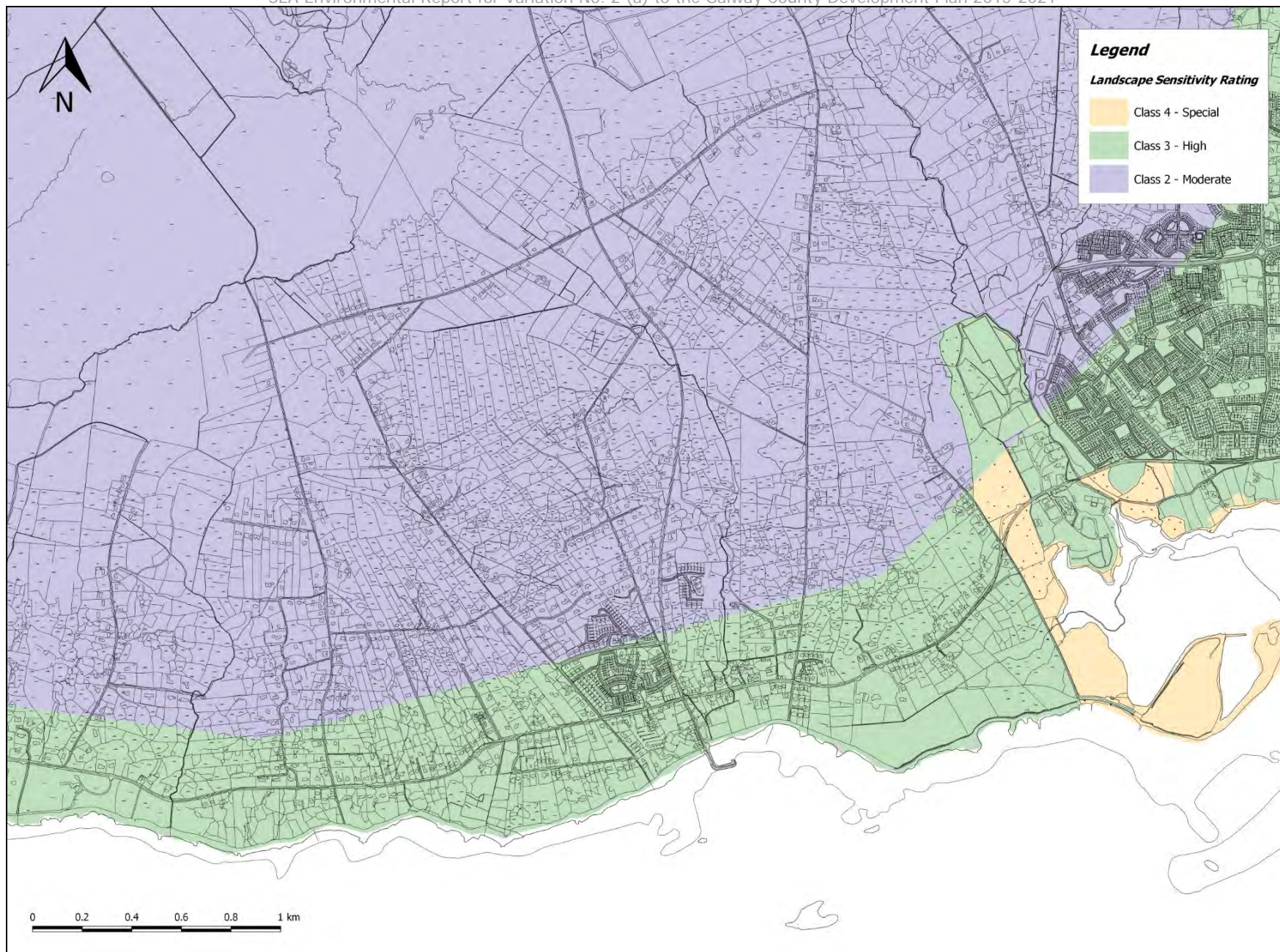


Figure 4.10 Landscape Sensitivity

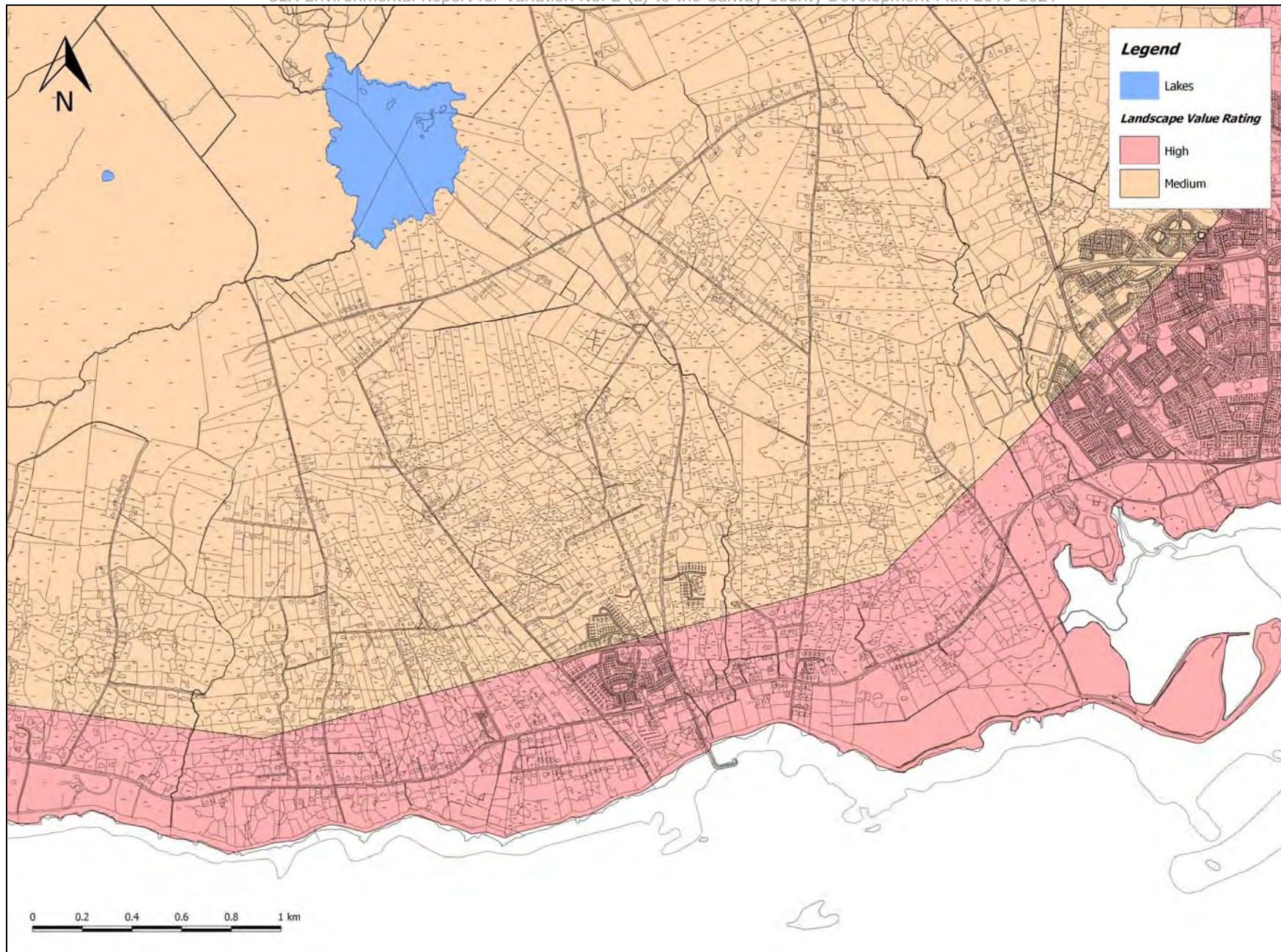


Figure 4.11 Landscape Value

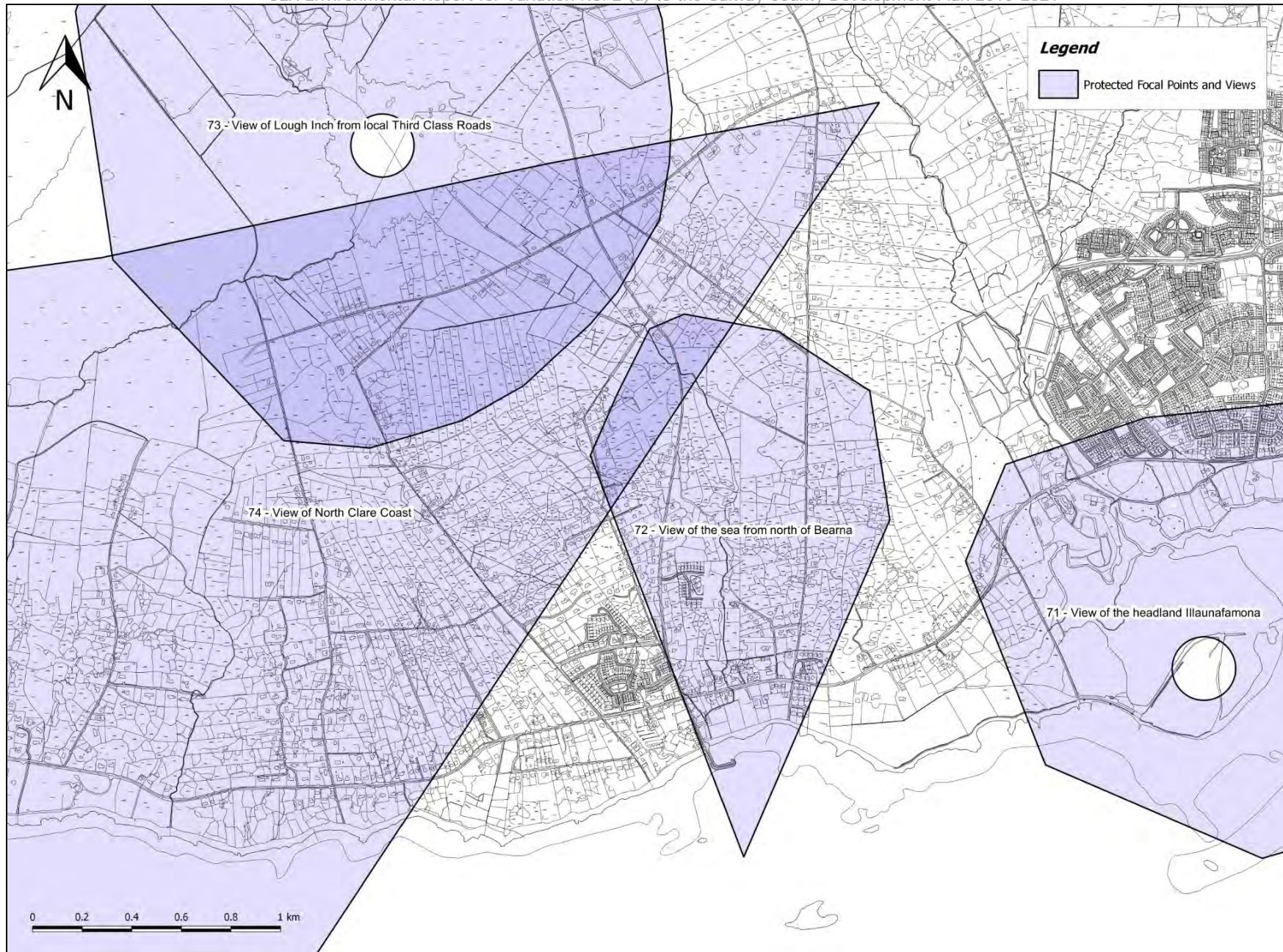


Figure 4.12 Focal Points/Views

Section 5 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives which have been transposed into Irish law and which are required to be implemented.

The SEOs are set out under a range of topics and are used as standards against which the provisions of the Variation and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

The SEOs are linked to indicators which can facilitate monitoring the environmental effects of the Plan as varied as well identifying targets which the Plan can help work towards.

All SEOs, indicators and targets are provided on Table 5.1 overleaf while background to these measures is provided in the subsections below.

Further detail on legislation, plans and programmes are provided under Section 2 (and associated Appendix I "Relationship with Legislation and Other Plans and Programmes") and Section 4.

Table 5.1 Strategic Environmental Objectives, Indicators and Targets

Environmental Component	Strategic Environmental Objective(s)	Selected Indicator(s)	Selected Target(s)
Biodiversity, Flora and Fauna	B1: To ensure compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species ²³	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	B1: Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan (as varied) ²⁴
	B2: To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan (as varied)	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan (as varied)
	B3: To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites ²⁵ and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan (as varied) B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan (as varied) B3ii: No significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976
	B4: To sustain existing sustainable rural management practices - and the communities who support them - to ensure the continuation of long established managed landscapes and the flora and fauna that they contain	B4: Population of the county involved in land management	B4: Sustain the population of the county involved in land management
Population and Human Health	PHH1: To protect populations and human health from exposure to incompatible landuses	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan (as varied), as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan (as varied)
Soil	S1: To avoid damage to the hydrogeological and ecological function of the soil resource in County Galway	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity

²³ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

²⁴ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- (a) no alternative solution available;
- (b) imperative reasons of overriding public interest for the plan to proceed; and
- (c) adequate compensatory measures in place.

²⁵ The Planning and Development Act 2000 as amended defines a 'wildlife site'.

Environmental Component	Strategic Environmental Objective(s)	Selected Indicator(s)	Selected Target(s)
Water	W1: To maintain and improve, where possible, the quality and status of surface waters	W1i: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009) W1ii: Mandatory and Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)	W1i: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve <i>good status</i> ²⁶ W1ii: To achieve - as a minimum - Mandatory values and, where possible, to achieve Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)
	W2: To prevent pollution and contamination of ground water	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
	W3: To comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009)	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk in compliance with <i>The Planning System and Flood Risk Management Guidelines for Planning Authorities</i>
Material Assets	M1: To serve new development with adequate and appropriate waste water treatment	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan (as varied)	M1: All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan (as varied)
	M2: To serve new development with adequate drinking water that is both wholesome and clean	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan (as varied)	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan (as varied)
	M3: To reduce waste volumes, minimise waste to landfill and increase recycling and reuse.	M3i: Total collected and brought household waste M3ii: Packaging recovered (t) by self-complying packagers	M3i: Minimise increases in and, where possible, reduce household waste generation M3ii: Maximise increases in packaging recovered (t) by self-complying packagers
Air and Climatic Factors	C1: To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means	C1: An increase in the percentage of the population travelling to work, school or college by public transport or non-mechanical means

²⁶ Good status as defined by the WFD equates to approximately the following in the current national schemes of classification as set out by the EPA:

- *Q4* in the biological classification of *rivers*;
- *Mesotrophic* in the classification of *lakes*; and
- *Unpolluted status* in the Assessment of Trophic Status of Estuaries and Bays in Ireland (ATSEBI).

Environmental Component	Strategic Environmental Objective(s)	Selected Indicator(s)	Selected Target(s)
Cultural Heritage	CH1: To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context	CH1: Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and the context of the above within the surrounding landscape where relevant) - protected from adverse effects resulting from development which is granted permission under the Plan (as varied)	CH1: Protect entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and their context of the above within the surrounding landscape where relevant) from adverse effects resulting from development which is granted permission under the Plan (as varied)
	CH2: To protect architectural heritage including entries to the Record of Protected Structures and Architectural Conservation Areas and their context	CH2: Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from adverse effects resulting from development which is granted permission under the Plan (as varied)	CH2: Protect entries to the Record of Protected Structures and Architectural Conservation Areas and their context from adverse effects resulting from development which is granted permission under the Plan (as varied)
Landscape	L1: To avoid significant adverse impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views.	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views - resulting from development which is granted permission under the Plan (as varied)	L1: No developments permitted which result in avoidable impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views - resulting from development which is granted permission under the Plan (as varied)

Section 6 Description of Alternatives

6.1 Introduction

As per the requirements of the SEA Directive, the SEA considered reasonable alternatives, which are capable of being implemented for both Proposed Variation 2 (a) and, subsequently, the Proposed Material Alterations, taking into account the objectives and the geographical scope of the Plan (as varied).

6.2 Alternatives considered for Proposed Variation 2 (a)

Galway County Council in preparing Proposed Variation 2 (a) for public display, developed three alternatives for Bearna as detailed below. An evaluation of alternatives is provided at Section 7.

6.2.1 Alternative 1: Even (Refinement and Consolidation) Development

- Achieving the population targets: Bearna to reach the population targets by 2021, resulting in balanced orderly development and implementation of the core strategy as contained in Chapter 2 of the Galway County Development Plan 2015-2021.
- This alternative provides Village Centre/Mixed Uses/Brownfield Development within and around the existing centre.
- Phase I Residential Expansion Areas are provided at two discrete areas, at lands to the west of Creagán and at lands around Cnoc Fraoigh.
- The infrastructure required to be in place to achieve the growth targets is already in place.
- Residential Development to take place on R1 lands in the lifetime of the Bearna Plan, unless a comprehensive justification is provided for alternative residential lands.
- Community development facilities to be developed in tandem with the targeted growth of the settlement.
- Village Centre developments would be developed in a planned and coordinated manner.
- Opportunity sites identified with clear design and proposed uses identified.
- Open Space and Recreational Lands would be preserved.

6.2.2 Alternative 2: Sporadic Development

- Achieving the population targets: Bearna to reach the population targets by 2021, resulting in the implementation of the core strategy as contained in Chapter 2 of the Galway County Development Plan 2015-2021.
- This alternative provides Village Centre/Mixed Uses/Brownfield Development within and around the existing centre.
- Phase I Residential Expansion Areas are provided:
 - Across lands including those provided for under Alternative 1 (at lands to the west of Creagán and at lands around Cnoc Fraoigh)
 - Along lands stretching westwards from the town, along the R336, to the west of Creagán.
 - Along lands stretching eastwards from the town, along the R336, to the east of Carraig an Iolar.
- Additional infrastructure would be required to accommodate sporadic development, more than would be required for Alternative 1 'Even (Refinement and Consolidation) Development'.
- Residential Development to take place on R1 and R2 lands in the lifetime of the Bearna Plan, unless an evidence based justification is provided for alternative residential lands.
- Village centre development would be sporadic and uncoordinated around the village centre zonings.
- Opportunity sites are identified but no clear guidance on the design parameters or uses identified.

6.2.3 Alternative 3: Haphazard Development

- Achieving the population targets - Bearna to reach the population targets by 2021, resulting in the implementation of the core strategy as contained in Chapter 2 of the Galway County Development Plan.
- Additional infrastructure would be required to accommodate sporadic development, more than would be required for Alternative 1 'Even (Refinement and Consolidation) Development' or Alternative 2 'Sporadic Development', development would have to be serviced by private waste water treatment systems which would have to be properly maintained.
- Residential development would occur on a piecemeal and haphazard basis within the three settlements.
- Ribbon and backland development would be a dominant feature within the settlement.
- Village centre development would be permitted on a number of different zonings and not concentrated on the village centre.
- No opportunity sites identified-laissez faire attitude in relation to development.
- Each application would be considered on its own merits and no land use zoning is provided for.

6.3 Alternatives considered for Proposed Material Alterations

16 Material Alterations were proposed after public display of the Proposed Variation. Proposed Material Alterations No. 1-7 were determined as requiring full SEA.

Material Alterations No. 1-6 proposed inappropriate development within areas that are at elevated risk of flooding. There is no established planning need to zone these lands. The alternative for each of these Alterations was to retain appropriate zoning as it was included within the Proposed Variation.

Proposed Material Alteration No. 7 proposed the rezoning of lands from Open Space/Recreation and Amenity Zoning to Residential Phase 1. There is no established planning need to zone these lands. A final alternative to Proposed Material Alterations 1-7 combined is included that involves retaining the zoning for all sites as it was included in the Proposed Variation.

The alternatives for the Proposed Material Alterations are arrayed on the table below.

Table 6.1 Alternatives considered for Proposed Material Alterations

Proposed Material Alteration No.	Alternative A: Zoning as proposed by Proposed Variation 2 (a)	Alternative B: Zoning as proposed by Material Alteration(s)
MA1	Business and Enterprise Opportunity Site No. 3 Open Space/Recreation and Amenity	Village Centre
MA2	Opportunity Site No. 2 Open Space/Recreation and Amenity	Village Centre
MA3	a) Open Space/Recreation and Amenity b) Residential Phase 1	a) Residential Phase 1 b) Residential Phase 2
MA4	Open Space/Recreation and Amenity	Village Centre
MA5	Open Space/ Recreation and Amenity	Village Centre
MA6	Open Space/ Recreation and Amenity	Village Centre
MA7 ²⁷	Open Space/ Recreation and Amenity	Residential Phase 1
MA1-7	Open Space/Recreation and Amenity Business and Enterprise Opportunity Sites No. 2 and 3 Residential Phase 1	Village Centre Residential Phase 1 Residential Phase 2

²⁷ Note that MA7 is located within Flood Zone C.

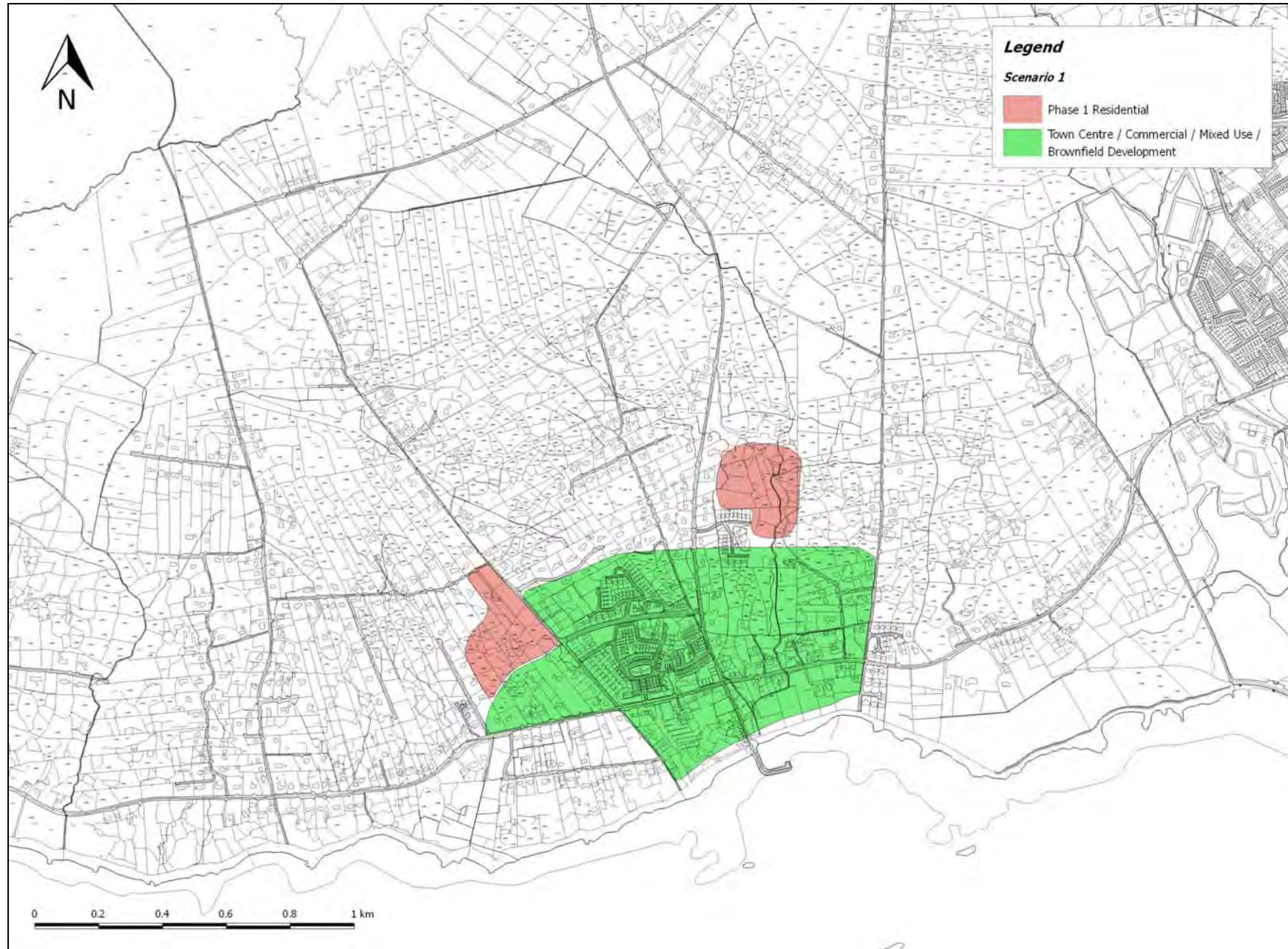


Figure 6.1 Alternative 1 considered for Proposed Variation 2 (a) in advance of public display

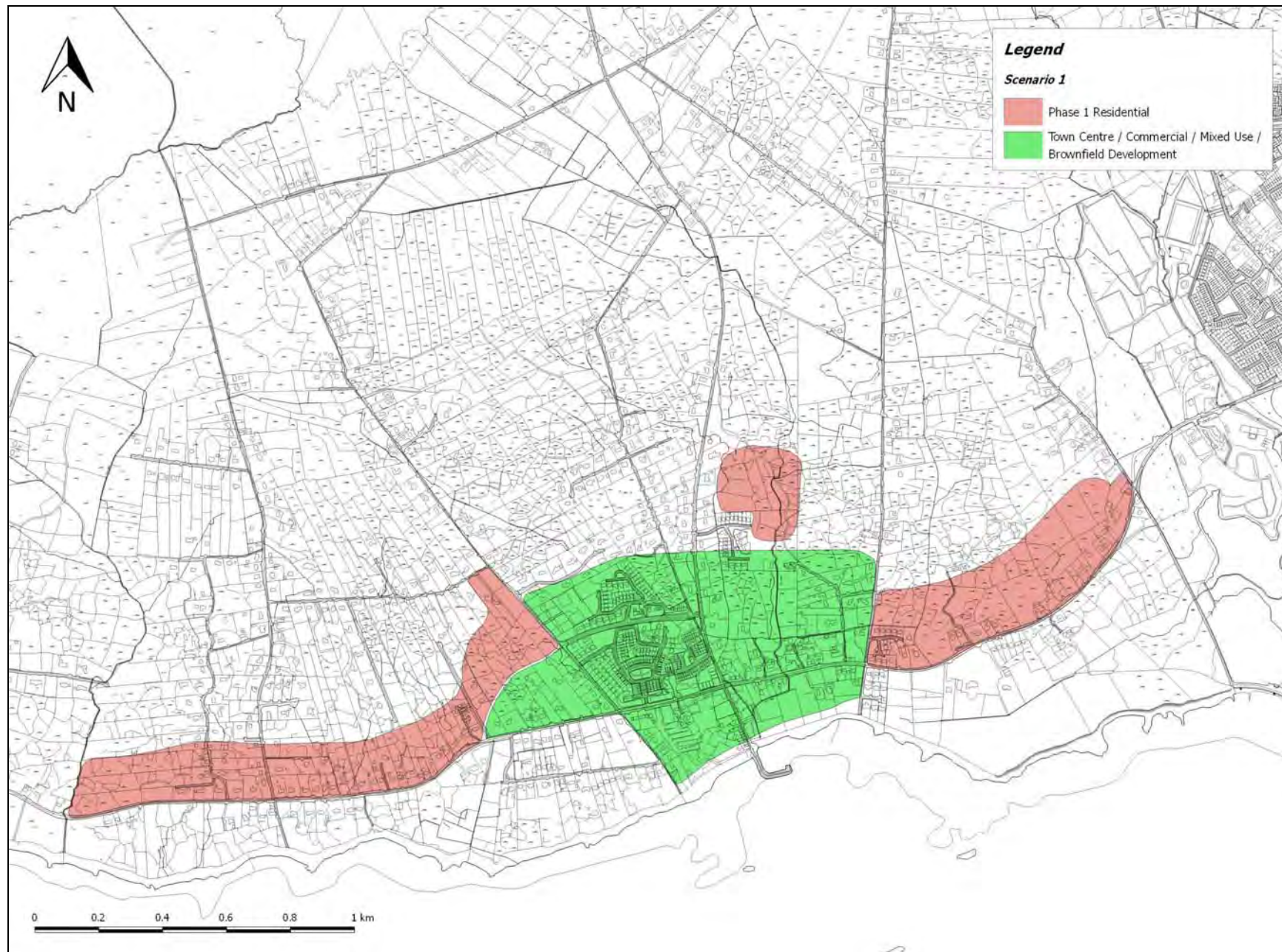


Figure 6.2 Alternative 2 considered for Proposed Variation 2 (a) in advance of public display

Section 7 Evaluation of Alternatives

7.1 Introduction

This section provides an evaluation of the environmental effects of implementing the alternatives including the taking into account of cumulative effects.

7.2 Methodology

The relevant aspects of the current state of the environment (see Section 4) and the Strategic Environmental Objectives (see Section 5 and Table 7.1) are used in the evaluation of alternatives.

The alternatives are evaluated using compatibility criteria (see Table 7.2 and Table 7.4 below) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the alternatives are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to ensure compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species'²⁸.

The interactions identified are reflective of likely significant environmental effects²⁹.

The degree to which effects can be determined is limited as the Variation will be implemented through the lower tier environmental assessments and/or decision making of the Council. Nonetheless a comparative evaluation of the various alternatives can be provided.

²⁸ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

²⁹ These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Table 7.1 Strategic Environmental Objectives

Environmental Component	SEO Code	SEO
Biodiversity, Flora and Fauna	B1	To ensure compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species ³⁰
	B2	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species
	B3	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites ³¹ and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act
	B4	To sustain existing sustainable rural management practices - and the communities who support them - to ensure the continuation of long established managed landscapes and the flora and fauna that they contain
Population and Human Health	PHH1	To protect populations and human health from exposure to incompatible landuses
Soil	S1	To avoid damage to the hydrogeological and ecological function of the soil resource in County Galway
Water	W1	To maintain and improve, where possible, the quality and status of surface waters
	W2	To prevent pollution and contamination of ground water
	W3	To comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009)
Material Assets	M1	To serve new development with adequate and appropriate waste water treatment
	M2	To serve new development with adequate drinking water that is both wholesome and clean
	M3	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse.
Air and Climatic Factors	C1	To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
Cultural Heritage	CH1	To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context
	CH2	To protect architectural heritage including entries to the Record of Protected Structures and Architectural Conservation Areas and their context
Landscape	L1	To avoid significant adverse impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views.

Table 7.2 Criteria for appraising the effect of Proposed Variation Alternatives on SEOs

Likely to Improve status of SEOs			Potential Conflict with status of SEOs - likely to be mitigated			Probable Conflict with status of SEOs- unlikely to be fully mitigated
to the Greatest degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	

Table 7.3 Criteria for appraising the effect of Proposed Material Alteration Alternatives on SEOs

Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated		Probable Conflict with status of SEOs- unlikely to be fully mitigated
	to a Lesser degree	to a Greater degree	

³⁰ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

³¹ The Planning and Development Act 2000 as amended defines a 'wildlife site'.

7.3 Evaluation of Alternatives considered for Proposed Variation 2 (a)

7.3.1 Cumulative Effects

Cumulative effects are one of the types of effects which have been considered by the assessment of the alternatives. Cumulative effects can be described as the addition of many small impacts to create one larger, more significant, impact.

There are 2 types of potential cumulative effects that have been considered, namely:

- Potential *intra-Plan* cumulative effects - these arise from the interactions between different types of potential environmental effects resulting from a plan, programme, etc. Where there are elevated levels of environmental sensitivities, future development could result in environmental conflicts and lead to a deterioration in environmental integrity. The interrelationships between environmental components that help determine these potential effects are identified on Table 8.4 in Section 8 e.g. interrelationships between: human health and water quality; human health and air quality; human health and flood risk; and ecology and water quality.

Other types of *intra-Plan* cumulative effect that could occur include:

- In combination effects arising from development at multiple settlements that are the subject of settlement plans provided for by the Plan as varied; and
- Effects arising from development provided for by the Variation in combination with effects arising from development provided for by other parts of the existing Plan;
- Potential *inter-Plan* cumulative effects - these arise when the effects of the implementation of one plan occur in combination with those of other plans, programmes, developments, etc.

Effects that may arise as a result of implementing the Plan as varied will be mitigated (by both provisions integrated into the Variation and existing provisions already in force through the County Development Plan – see Section 9) to the extent that the only residual adverse effects likely to occur as a result of implementation of the Variation are those which are identified at Table 8.3.

With regard to potential *inter-Plan* cumulative environmental effects, these occur as a result of the combination of: potential environmental effects which are identified by the assessment; and the effects arising from other legislation, plans, programmes or developments.

In considering the relationship with legislation and other plans and programmes it is important to note that the Plan will be implemented within areas that have existing plans and programmes (see Sections 4 and 5 and Appendix I) for a range of sectors at a range of levels (e.g. National, River Basin District, Regional, County and Local) that are already subject to more specific higher and lower tier SEA and AA.

The assessment of the likely *inter-Plan* cumulative environmental effects requires knowledge of the likely effects of all plans/developments under consideration. The assessment is limited in this instance as there has been limited assessment of the likely types of developments provided for by other policies, plans and programmes that could occur in combination with the implementation of the Variation. Where they exist, the SEA recognises the existence of other environmental assessments with a view to avoid duplication of assessment, in compliance with the SEA Directive.

The SEA undertaken for the Plan has taken account of the Council's obligation to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

Cumulative effects that have been considered include those resulting from the Variation and:

- Other land use Plans;
- Water services, transport and energy infrastructure plans (e.g. Irish Water's Water Services Strategic Plan and associated Capital Investment Plan and Grid25 and associated Implementation Programme); and
- Environmental protection and management plans.

Such potential cumulative effects include the following (note that potential adverse cumulative effects will be mitigated by both provisions integrated into the Variation and existing provisions already in force through the County Development Plan – see Section 9):

- Contributions towards reductions in travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of facilitating sustainable mobility/a shift from motorised transport modes to more sustainable and non-motorised transport modes.
- Contributions towards travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of facilitating development which must be accompanied by road capacity.
- Facilitation of new development which is accompanied by appropriate levels of water services thereby contributing towards environmental protection.
- Need for and use of water and waste water treatment capacity arising from new developments and associated potential adverse effects.
- Potential cumulative effects upon surface and ground water status as a result of housing, employment, agriculture and forestry – loadings and abstractions;
- Potential cumulative effects (habitat damage, enhancing ecological connectivity, contributing towards sustainable mobility) arising from linear developments, such as those relating to green infrastructure;
- Potential cumulative effects on flood risk by, for example, development of greenfield lands or obstruction of flood paths;
- In combination with plans and programmes from all sectors potential adverse effects on all environmental components arising from all development in greenfield and brownfield areas (e.g. infrastructural, residential, economic, agricultural etc.). The type of these effects are consistent with those described on Table 7.5. These plans and programmes from other sectors undergo SEA and comply with environmental legislation while projects are subject to EIA and AA, as relevant.

7.3.2 Significant Positive Effects Common to all Alternatives considered for Proposed Variation 2 (a)

By providing for development within the existing development boundary and facilitating the use of existing utilities and brownfield sites, all alternatives would be likely to contribute towards a reduced need to develop more sensitive, undeveloped areas elsewhere in the wider Bearna area that are further from the town and less well serviced. This would be likely to result in significant positive environmental effects on environmental components as indicated on Table 7.4.

Table 7.4 Significant Positive Effects common to all alternatives for Proposed Variation 2 (a)

Environmental Component	Significant Positive Effect, likely to occur
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> • Contributes towards protection of ecology (including designated sites, ecological connectivity, habitats) – due to increased utilisation of lands within the existing development boundary and use of existing utilities and brownfield sites. • Contributes towards protection of ecology with respect to the provision of water services. • Contributes towards protection of ecology as a result of contributing towards the protection of environmental vectors, including air and water. • Is consistent with approach provided by the existing Plan, to sustain existing sustainable rural management practices - and the communities who support them - to ensure the continuation of long established managed landscapes and the flora and fauna that they contain
Population and Human Health	<ul style="list-style-type: none"> • Contributes towards protection of human health with respect to the provision of water services and the provision of transport infrastructure integrated with land use planning – and associated interactions with sustainable mobility, emissions and energy usage. • Contributes towards protection of human health as a result of contributing towards the protection of environmental vectors, including air and water.
Soil	<ul style="list-style-type: none"> • Contributes towards protection of soil – due to increased utilisation of lands within the existing development boundary and use of existing utilities and brownfield sites. • Contributes towards protection of soil with respect to the provision of water services.
Water	<ul style="list-style-type: none"> • Contributes towards protection and management of ground and surface waters due to facilitating development within an established and serviced settlement centre.
Material Assets	<ul style="list-style-type: none"> • Allows for use of planned infrastructure including water services infrastructure and transport infrastructure. • Makes use of existing water services and drainage infrastructure.
Air and Climatic Factors	<ul style="list-style-type: none"> • Facilitates contribution towards a shift from car to more sustainable and non-motorised transport modes. • Facilitates contribution towards reducing congestion and associated adverse effects on air quality. • Facilitates contribution towards reductions in travel related greenhouse gas and other emissions to air.
Cultural Heritage	<ul style="list-style-type: none"> • Contributes towards protection of cultural heritage in wider region by facilitating development within an existing settlement.
Landscape	<ul style="list-style-type: none"> • Contributes towards protection of wider landscape by facilitating development within an existing settlement.

Although significant positive environmental effects would occur under each of the alternatives, the extent to which they would occur varies across each of the alternatives and this is addressed under the evaluation of each of the alternatives below.

7.3.3 Potentially Significant Adverse Effects Common to all Alternatives considered for Proposed Variation 2 (a)

All of the alternatives considered for Proposed Variation 2 (a) provide for development of Bearna. Such development would have the potential to conflict with environmental components – to different degrees. Potentially significant adverse environmental effects arising from this conflict are common to all alternatives and are described on Table 7.5.

Although potentially significant adverse environmental effects would occur under each of the alternatives, the extent to which they would occur varies across each of the alternatives and this is addressed under the evaluation of each of the alternatives below.

Table 7.5 Potentially Significant Adverse Effects, if unmitigated, common to all alternatives for Proposed Variation 2 (a)

Environmental Component	Potentially Significant Adverse Environmental Effects, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Arising from both construction and operation of development and associated infrastructure: <ul style="list-style-type: none"> o Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; o Habitat loss, fragmentation and deterioration, including patch size and edge effects; and o Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species.
Population and Human Health	<ul style="list-style-type: none"> o Potential interactions if effects upon environmental vectors such as water and air are not mitigated.
Soil	<ul style="list-style-type: none"> o Damage to the hydrogeological and ecological function of the soil resource.
Water	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology. o Increase in the risk of flooding.
Material Assets	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). o Increases in waste levels.
Air and Climatic Factors	<ul style="list-style-type: none"> o Emissions to air including greenhouse gas emissions and other emissions.
Cultural Heritage	<ul style="list-style-type: none"> o Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape, especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views.

7.3.4 Evaluation against SEOs

By:

- Concentrating Village Centre/Mixed Uses/Brownfield Development within and around the existing village centre and
- Providing for new Residential Expansion Areas over two discrete sites that are already or most easily served by infrastructure and could serve demand for new development

Alternative 1 'Even (Refinement and Consolidation) Development' would result in the greatest degree of significant positive effects (see Section 7.3.2) and least degree of potential conflicts (see Section 7.3.3). Development would be most likely to occur within or closest to the existing settlement centre on serviced sites.

By:

- Concentrating Village Centre/Mixed Uses/Brownfield Development within and around the existing village centre and
- Providing for new Residential Expansion Areas over a greater number of sites that could serve demand for new development

Alternative 2 'Sporadic Development' would result in a relatively moderate degree of significant positive effects (see Section 7.3.2) and a relatively moderate degree of potential conflicts (see Section 7.3.3). In comparison to Alternative 2, development would be spread out over a greater number of sites, some not currently serviced and some further from the settlement centre.

Additional infrastructure would be required to accommodate sporadic development, more than would be required for Alternative 1 'Even (Refinement and Consolidation) Development'.

By:

- Not identifying opportunity sites; and
- Following a 'laissez faire' approach in relation to development, with each application considered on its own merits and no land use zoning would be provided for

Alternative 3 'Haphazard Development' would result in the least degree of significant positive effects (see Section 7.3.2) and greatest degree of potential conflicts (see Section 7.3.3). Development would be spread out over the entire area associated with the settlement, with ribbon and backland development a dominant feature within the settlement. Although existing Plan provisions – including those relating to environmental protection/management and sustainable development – would have to be complied with, the potential for cumulative adverse effects would be significantly higher with this alternative.

All of the alternatives are consistent with approach provided by the existing Plan, to sustain existing sustainable rural management practices - and the communities who support them - to ensure the continuation of long established managed landscapes and the flora and fauna that they contain.

Table 7.6 Assessment of Alternatives considered for Proposed Variation 2 (a) against Strategic Environmental Objectives

Alternative	Likely to Improve status of SEOs			Potential Conflict with status of SEOs - likely to be mitigated			Probable Conflict with status of SEOs- unlikely to be fully mitigated
	to the Greatest degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
Alternative 1: Even (Refinement and Consolidation) Development	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	B4		B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	B4		
Alternative 2: Sporadic Development		B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1			B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Alternative 3: Haphazard Development		B4	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		B4	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	

7.3.5 Selected Alternative for Proposed Variation No. 2 (a) that was placed on public display

The Selected Alternative that emerged from the planning/SEA process and was placed on public display as "Proposed Variation No. 2 (a)" was Alternative 1: Even (Refinement and Consolidation) Development.

This alternative was selected and developed by the Planning Team and placed on public display by the Council having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning - including social and economic - effects that also were considered by the Council.

The original land use zoning map for the town that evolved from the selection of Alternative 1 'Even (Refinement and Consolidation) Development' and that was placed on public display as Proposed Variation No. 2 (a) is provided at Figure 7.1.

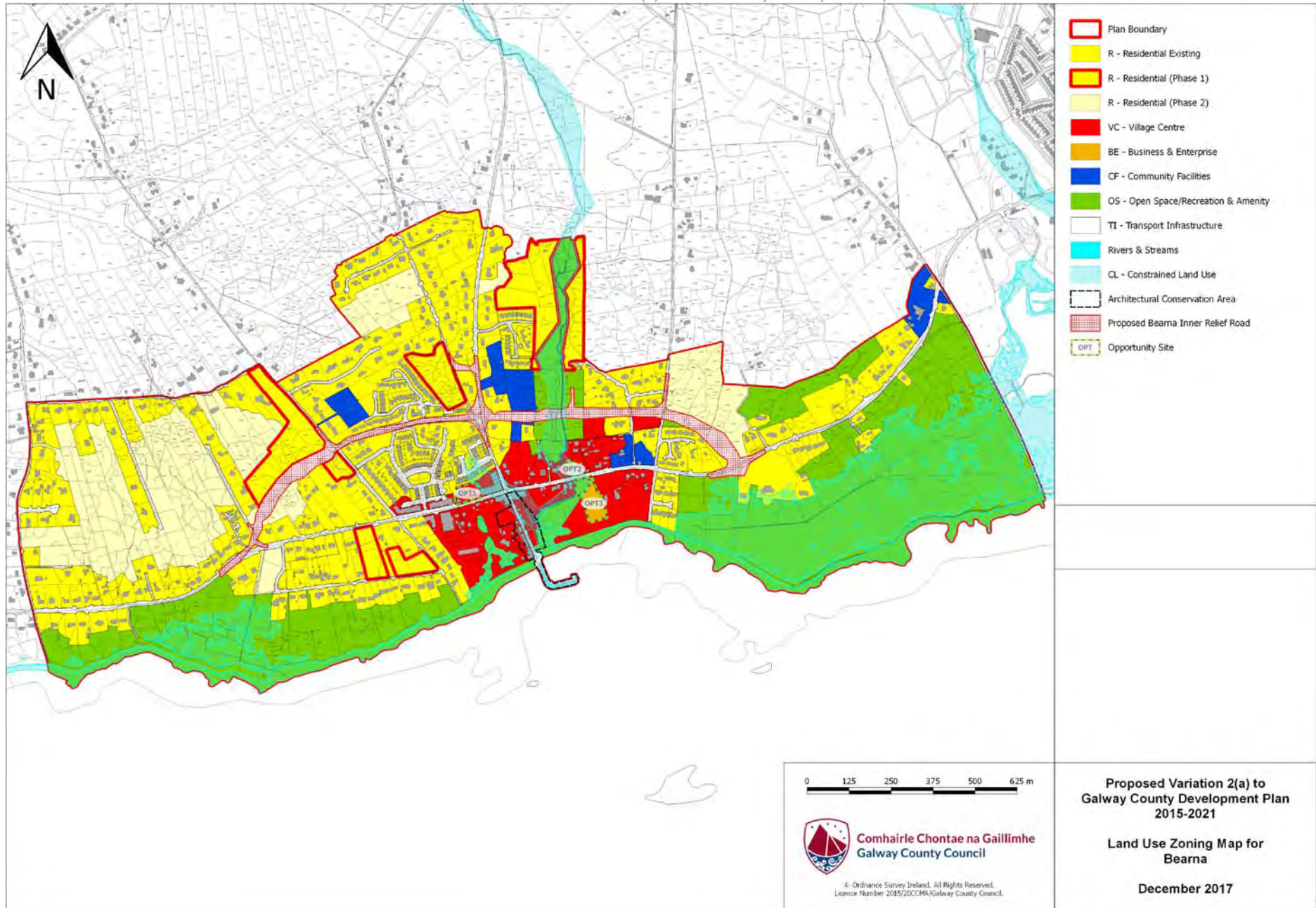


Figure 7.1 Land Use Zoning Map that was placed on public display as Proposed Variation 2 (a)

7.4 Evaluation of Alternatives considered for Proposed Material Alterations

16 Material Alterations were proposed after public display of the Proposed Variation. Proposed Material Alterations No. 1-7 were determined as requiring full SEA.

Material Alterations No. 1-6 proposed inappropriate development within areas that are at elevated risk of flooding. There is no established planning need to zone these lands. The alternative for each of these Alterations was to retain appropriate zoning as it was included within the Proposed Variation.

Proposed Material Alteration No. 7³² proposed the rezoning of lands from Open Space/Recreation and Amenity Zoning to Residential Phase 1. There is no established planning need to zone these lands. A final alternative to Proposed Material Alterations 1-7 combined is included that involves retaining the zoning for all sites as it is included in the Proposed Variation.

As detailed under Section 6.3, alternatives considered for Proposed Material Alterations are as follows: Alternative A: Zoning as proposed by Proposed Variation 2 (a); and Alternative B: Zoning as proposed by Material Alteration(s).

7.4.1 Alternative A for Individual Proposed Material Alterations

Alternatives that provide for Zoning as proposed by Proposed Variation 2 (a) that was placed on public display (these alternatives are referred to as **Alternative A**, see Table 6.1) would be likely to contribute towards flood risk management in compliance with the Flood Risk Management Guidelines and as a result would contribute towards the protection of human health. As these alternatives provide for various types of built development they would have the potential to conflict with all environmental components. Potentially significant adverse environmental effects arising from this conflict are described on Table 7.7.

Table 7.7 Potentially Significant Adverse Effects, if unmitigated, common to all alternatives for Proposed Material Alterations

Environmental Component	Potentially Significant Adverse Environmental Effects, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> o Arising from both construction and operation of development and associated infrastructure: <ul style="list-style-type: none"> o Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; o Habitat loss, fragmentation and deterioration, including patch size and edge effects; and o Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species.
Population and Human Health	<ul style="list-style-type: none"> o Potential interactions if effects upon environmental vectors such as water and air are not mitigated.
Soil	<ul style="list-style-type: none"> o Damage to the hydrogeological and ecological function of the soil resource.
Water	<ul style="list-style-type: none"> o Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology. o Increase in the risk of flooding.
Material Assets	<ul style="list-style-type: none"> o Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). o Increases in waste levels.
Air and Climatic Factors	<ul style="list-style-type: none"> o Emissions to air including greenhouse gas emissions and other emissions.
Cultural Heritage	<ul style="list-style-type: none"> o Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.
Landscape	<ul style="list-style-type: none"> o Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape, especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views.

³² Note that MA7 is located within Flood Zone C.

For all interactions under Alternative A, these effects would be mitigated by both provisions integrated into the Variation and existing provisions already in force through the County Development Plan – see Section 9.

Alternative A for individual alterations is assessed against SEOs on Table 7.9.

7.4.2 Alternative B for Individual Proposed Material Alterations

Alternatives that provide for zoning as proposed by Material Alterations to Proposed Variation 2 (a) that was placed on public display (these alternatives are referred to as **Alternative B**, see Table 6.1) provide a range of incompatible uses within areas that are at elevated risk of flooding. The areas that are at elevated risk of flooding have been identified by the Strategic Flood Risk Assessment.

Providing incompatible uses in these areas is contrary to proper and sustainable flood risk management and contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14* recently issued by the Department of the Environment, Heritage & Local Government.

If any of the lands subject to these Proposed Material Alterations that are located within Flood Zones A or B were developed, there would be a heightened risk of flooding and associated adverse effects on people and their assets. Such effects are identified on Table 7.8 and range from loss of life, to damage to property, to loss of income.

Table 7.8 Selection of Adverse Effects (on People and Property) that occur as a result of Flooding

Tangible Effects	Intangible Human and Other Effects
Damage to buildings (houses)	Loss of life
Damage to contents of buildings	Physical injury
Damage to new infrastructure e.g. roads	Increased stress
Loss of income	Physical and psychological trauma
Disruption of flow of employees to work causing knock on effects	Increase in flood related suicide
Enhanced rate of property deterioration and decay	Increase in ill health
Long term rot and damp	Homelessness
	Loss of uninsured possessions

In addition to these effects on people and property, there would be elevated potential for water quality to be adversely affected (as a result of flooding of water treatment systems and collection networks and flooding of unknown substances stored onsite). Polluted or contaminated waters would have the potential to adversely affect human health and biodiversity and flora and fauna (including designated European Sites).

Furthermore, as these Alternatives provide for various types of built development they would have the potential to conflict with other environmental components. Potentially significant adverse environmental effects arising from this conflict are described on Table 7.7 and Table 7.5.

Alternative B for individual alterations is assessed against SEOs on Table 7.9.

7.4.3 Alternative A for Combined Proposed Material Alterations

Alternatives that provide for Zoning as proposed by Proposed Variation 2 (a) that was placed on public display (these alternatives are referred to as **Alternative A**, see Table 6.1) would be likely to cumulatively contribute towards flood risk management in compliance with the Flood Risk Management Guidelines and as a result would contribute towards the protection of human health.

As these alternatives provide for various types of built development they would have the potential to cumulatively conflict with all environmental components. Potentially significant adverse environmental effects arising from this conflict are described on Table 7.7 and Table 7.5.

The extent of potentially significant adverse environmental effects arising under Alternative A would be of a lesser degree than the extent of potentially significant adverse environmental effects arising under Alternative B.

Alternative A for combined alterations is assessed against SEOs on Table 7.9.

7.4.4 Alternative B for Combined Proposed Material Alterations

Alternatives that provide for zoning as proposed by the Material Alterations that were placed on public display (these alternatives are referred to as **Alternative B**, see Table 6.1) provide a range of incompatible uses within areas that are at elevated risk of flooding. These alternatives would have the potential to cumulatively, adversely and significantly affect human health, new and existing property, the status of waters and ecology.

Taking into account the considerable extent of lands involved, cumulative adverse effects would be likely to arise on all environmental components as a result of the provision of unnecessary zoning (for which there is no established planning need) at Proposed Material Alterations No. 1-7 lands. The extent of potentially significant adverse environmental effects arising under Alternative B would be of a greater degree than the extent of potentially significant adverse environmental effects arising under Alternative A.

Alternative B for combined alterations is assessed against SEOs on Table 7.9.

7.4.5 The Recommended Alternative for the Proposed Material Alterations 1-7

In order to be consistent with the need to contribute towards proper planning and sustainable development and in order to comply with the Flood Risk Management Guidelines, it was recommended by the SEA and the Planning Department that Alternative A (zoning as proposed by Proposed Variation 2 (a) and not zoning as proposed by the Material Alterations) was selected in each instance by the Elected Members.

Elected Members decided to select zoning as proposed by the Material Alterations (Alternative B). This zoning is contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*.

Table 7.9 Assessment of Alternatives considered for the Proposed Material Alterations against Strategic Environmental Objectives

Alternative	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated		Probable Conflict with status of SEOs- unlikely to be fully mitigated
		to a Lesser degree	to a Greater degree	
Material Alteration No. 1, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 1, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 2, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 2, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 3, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 3, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 4, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 4, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 5, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 5, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 6, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 6, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alteration No. 7, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alteration No. 7, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1
Material Alterations 1-7 Combined, Alternative A	W3 PHH1	B1 B2 B3 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1		
Material Alterations 1-7 Combined, Alternative B			B1 B2 B3 PHH1 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1

Section 8 Assessment of the Adopted Variation 2 (a)

8.1 Introduction

This section provides an assessment of environmental effects from implementation of Variation 2 (a) as adopted. The provisions of the Variation are evaluated using compatibility criteria (see Table 8.1 below) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the provisions of the Variation are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'To ensure compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species³³'.

The interactions identified are reflective of likely significant environmental effects³⁴;

1. Interactions that would be likely to improve the status of a particular SEO would be likely to result in a significant positive effect on the environmental component to which the SEO relates.
2. Interactions that would potentially conflict with the status of an SEO and would be likely to be mitigated would be likely to result in potential significant negative effects however these effects would be likely to be mitigated by measures which have been integrated into the Plan (as varied)/ Variation 2 (a).
3. Interactions that would probably conflict with the status of an SEO and would be unlikely to be mitigated would be likely to result in a significant negative effect on the environmental component to which the SEO relates.

The degree of significance of effects occurring cannot be fully determined at this level of decision making due to the lack of exact detail available with regard to the type or scale of development that will be permitted under the Plan (as varied).

Mitigation measures to prevent or reduce significant adverse effects posed by the Variation are identified in Section 9 - these have been integrated into the Plan (as varied).

Table 8.1 Criteria for appraising the effect of Variation provisions on SEOs

Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be fully mitigated	No Likely interaction with status of SEOs
---	--	--	--

³³ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

³⁴ These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

8.2 Overall Evaluation

Galway County Council integrated a number of recommendations arising from the SEA, AA and SFRA processes into the Proposed Variation (see Section 9).

By providing for development within the existing development boundary and facilitating the use of existing utilities and brownfield sites, the Variation would be likely to contribute towards a reduced need to develop more sensitive, undeveloped areas elsewhere in the Bearna area that are further from the town and less well serviced.

However, not all recommendations made by the SEA/SFRA process were accepted by the Elected Members. The land use zoning provided for by Material Alterations No. 1-6 that was adopted as part of the Variation:

- Provide for a range of incompatible uses within areas that are at elevated risk of flooding (these areas were identified by the Strategic Flood Risk Assessment);
- Provide incompatible uses that are contrary to proper and sustainable flood risk management and contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*;
- Facilitate development that would result in a heightened risk of flooding and associated adverse effects on people and their assets. Such effects are identified on Table 8.2 and range from loss of life, to damage to property, to loss of income;
- Would result in elevated potential for water quality to be adversely affected (as a result of flooding of water treatment systems and collection networks and flooding of unknown substances stored onsite). Polluted or contaminated waters would have the potential to adversely affect human health and biodiversity and flora and fauna (including designated European Sites).

The land use zoning provided for by Material Alterations No. 1-7 that was adopted as part of the Variation would be likely to result in cumulative adverse effects on all environmental components, taking into account the considerable extent of lands involved and as a result of the provision of this unnecessary zoning (for which there is no established planning need).

Table 8.2 Selection of Adverse Effects (on People and Property) that occur as a result of Flooding

Tangible Effects	Intangible Human and Other Effects
Damage to buildings (houses)	Loss of life
Damage to contents of buildings	Physical injury
Damage to new infrastructure e.g. roads	Increased stress
Loss of income	Physical and psychological trauma
Disruption of flow of employees to work causing knock on effects	Increase in flood related suicide
Enhanced rate of property deterioration and decay	Increase in ill health
Long term rot and damp	Homelessness
	Loss of uninsured possessions

In order to be consistent with the need to contribute towards proper planning and sustainable development and in order to comply with the Flood Risk Management Guidelines, it was recommended by the SEA that zoning as proposed by Proposed Variation 2 (a) and not zoning as proposed by the Material Alterations was selected.

Elected Members decided to select zoning as proposed by the Material Alterations. This zoning is contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*.

Table 8.3 provides a detailed overall evaluation of the environmental effects arising from the Variation. The effects encompass all in-combination/cumulative effects arising from implementation of the Variation. The potentially significant adverse environmental effects (if unmitigated) arising from

implementation of the Variation are detailed as are residual effects, taking into account mitigation through both provisions integrated into the Variation and existing provisions already in force through the County Development Plan – see Section 9.

Environmental impacts which occur will be determined by the nature and extent of multiple or individual projects and site specific environmental factors. Strategic Environmental Objective (SEO) codes are taken from Table 7.1.

Table 8.3 Overall Evaluation – Effects arising from the Adopted Variation 2 (a)

Environmental Component	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Residual Adverse Effects	Relevant SEO Codes
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> • Contributes towards protection of ecology (including designated sites, ecological connectivity, habitats) – due to increased utilisation of lands within the existing development boundary and use of existing utilities and brownfield sites. • Contributes towards protection of ecology with respect to the provision of water services. • Contributes towards protection of ecology as a result of contributing towards the protection of environmental vectors, including air and water. • Is consistent with approach provided by the existing Plan, to sustain existing sustainable rural management practices - and the communities who support them - to ensure the continuation of long established managed landscapes and the flora and fauna that they contain. 	<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> • Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; • Habitat loss, fragmentation and deterioration, including patch size and edge effects; and • Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species. 	<ul style="list-style-type: none"> • Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces. • Losses or damage to ecology (these would be in compliance with relevant legislation). 	B1 B2 B3 B4
Population and Human Health	<ul style="list-style-type: none"> • Contributes towards protection of human health with respect to the provision of water services and the provision of transport infrastructure integrated with land use planning – and associated interactions with sustainable mobility, emissions and energy usage. • Contributes towards protection of human health as a result of contributing towards the protection of environmental vectors, including air and water. 	<ul style="list-style-type: none"> • Potential interactions if effects upon environmental vectors such as water and air are not mitigated. 	<ul style="list-style-type: none"> • Significant adverse effects on population and human health likely, arising from introduction of heightened flood risk to existing and future populations and property • Potential interactions with residual effects on environmental vectors. This has been mitigated by provisions which have been integrated into the Plan as varied, including those relating to sustainable mobility and infrastructural provision. 	PHH1
Soil	<ul style="list-style-type: none"> • Contributes towards protection of soil – due to increased utilisation of lands within the existing development boundary and use of existing utilities and brownfield sites. • Contributes towards protection of soil with respect to the provision of water services. 	<ul style="list-style-type: none"> • Damage to the hydrogeological and ecological function of the soil resource. 	<ul style="list-style-type: none"> • Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces. 	S1
Water	<ul style="list-style-type: none"> • Contributes towards protection and management of ground and surface waters due to facilitating development within an established and serviced settlement centre. 	<ul style="list-style-type: none"> • Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology. • Increase in the risk of flooding. 	<ul style="list-style-type: none"> • Increased loadings as a result of development to be in compliance with River Basin Management Plan. • Introduces significantly heightened flood risk to existing and future populations and property, contrary to the requirements of the Flood Risk Management Guidelines. • Elsewhere, flood related risks remain due to uncertainty with regard to extreme weather events. 	W1 W2 W3

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Environmental Component	Significant Positive Effect, likely to occur	Potential Effect, if unmitigated	Residual Adverse Effects	Relevant SEO Codes
Material Assets	<ul style="list-style-type: none"> Allows for use of planned infrastructure including water services infrastructure and transport infrastructure. Makes use of existing water services and drainage infrastructure. 	<ul style="list-style-type: none"> Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). Increases in waste levels. 	<ul style="list-style-type: none"> Residual wastes to be disposed of in line with higher level waste management policies. 	M1 M2
Air and Climatic Factors	<ul style="list-style-type: none"> Facilitates contribution towards a shift from car to more sustainable and non-motorised transport modes. Facilitates contribution towards reducing congestion and associated adverse effects on air quality. Facilitates contribution towards reductions in travel related greenhouse gas and other emissions to air. 	<ul style="list-style-type: none"> Emissions to air including greenhouse gas emissions and other emissions. Climate adaptation interactions. 	<ul style="list-style-type: none"> An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable mobility. 	C1
Cultural Heritage	<ul style="list-style-type: none"> Contributes towards protection of cultural heritage in wider region by facilitating development within an existing settlement. 	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities. 	<ul style="list-style-type: none"> Potential alteration to the context and setting of architectural heritage however these will occur in compliance with legislation. Potential alteration to the context and setting of archaeological heritage however this will occur in compliance with legislation. Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Plan as varied. 	CH1 CH2
Landscape	<ul style="list-style-type: none"> Contributes towards protection of wider landscape by facilitating development within an existing settlement. 	<ul style="list-style-type: none"> Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape, especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views. 	<ul style="list-style-type: none"> The Plan as varied contributes towards the protection of landscape designations. The County's landscapes will change overtime as a result of natural changes in vegetation cover combined with new developments. This will occur within Bearna, including at coastal lands to the south of the R336. 	L1

8.3 Appropriate Assessment

Appropriate Assessment (AA) has been undertaken alongside the preparation of the Variation 2 (a).

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC).

The preparation of the Variation, SEA and AA has taken place concurrently and the findings of the AA have informed both the Variation and the SEA. All recommendations made by the AA were integrated into the Variation.

The conclusion of the Stage 2 AA is that Variation 2 (a) is not foreseen to give rise to any significant adverse effects on designated European Sites, alone or in combination with other plans or projects. Specific mitigation measures had to be integrated into the Variation in order to avoid potential effects arising from zoning within floodplains.

8.4 Strategic Flood Risk Assessment

8.4.1 Overview

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Variation. The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The SFRA provides an appropriately strategic assessment of flood risk within the town of Bearna and has been undertaken in full compliance with the 2009 Flood Guidelines and subsequent circular PL2/2014. The SFRA has been undertaken with the aim of protecting existing and future properties and populations from the adverse effects of flooding.

8.4.2 Submissions received on Flood Zones and Zoning

The SFRA includes the delineation of flood zones. Various submissions were received during the Variation preparation/adoption process that requested reductions to these flood zones, however in all instances insufficient evidence was provided to justify any reductions to the extents of the flood zones and therefore changes on this basis would be contrary to the Flood Guidelines. Zoning of these lands as requested, for residential and/or village centre development, would be inappropriate and contrary to the Guidelines.

Allowing inappropriate land use zoning in flood zones would also be contrary to the correct approach followed in the 2012 Bearna Plan – where the Flood Guidelines were adhered to.

Submissions requesting changes to land use zoning failed to demonstrate awareness of the evidence of historical flooding in this area in 1977, 2015 and 2017. Photos and videos have been submitted on two occasions during the plan making process, January 2018 and May 2018, which relate to lands adjoining the Trusky Stream.

A number of submissions identify that flood risk arising from zoning for incompatible uses in within Flood Zones A/B can be adequately managed by structural and non-structural flood risk management measures however this would not be in compliance with the Flood Risk Management Guidelines³⁵.

³⁵ Page 21 "Chapter 3 Principles and Key Messages", "Key Messages": *Only when both avoidance and substitution cannot take place should consideration be given to mitigation and management of risks.*"

Lands proposed by submissions to be zoned for inappropriate uses are within Flood Zone A, an area at elevated risk of flooding. The Guidelines require a sequential approach involving firstly to avoid inappropriate development in this area. Exceptions to the restriction of development are only allowed where a detailed Justification Test (taking into account flood risk management measures) is passed. A Justification Test would not be passed in this instance as there are more alternative lands available for village centre/residential uses in Bearna. As a Justification Test would not be passed consideration cannot be given to the mitigation and management of risk.

Furthermore, where channel clearance works have been undertaken, the Office of Public Works (OPW) have advised (February 2018) that it would be contrary to the precautionary principle to assume that rivers will be maintained in their improved state by a private land-owner. There is no statutory duty on or budget for the OPW to maintain river schemes in Bearna. The OPW have identified that it would not actively condone private clearance for the purpose of achieving a re-zoning of land. Is it therefore unreasonable to identify flood zones based on the non-equilibrium depth of the channel.

On foot of a number of submissions from Bearna residents that contained video and photographic evidence of historic flooding in the Cnoc Fraoigh area on lands adjoining the Trusky Stream in 2015 and 2017, Flood Zone A at Cnoc Fraoigh was extended. It is also noted that evidence was provided of a flood event in the vicinity of the R336, the Twelve Pins Hotel and Pier Road, when a number of houses in the Pier Road area were flooded as well as undeveloped land that is now developed.

A Flood Study for the Cnoc Fraoigh lands that was included as part of a separate submission did not provide any contrary evidence that these photos were incorrect or that there was any rational for flooding on these lands on two occasions. In review of this submission, reference was made to a previous planning application (09-1278) that referenced "Other Natural Lake/Flooding" to lands to the east of Cnoc Fraoigh Housing Estate.

Given the issues that presented during the Variation preparation/adoption process as summarised above and combined with the significant number of recent floods in the County, it was identified that it would be irresponsible and reckless to zone lands for vulnerable uses in these areas.

8.4.3 Compliance of Variation 2 (a) with the Flood Guidelines

The preparation of the Variation, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed the SEA. The SFRA has facilitated the integration of certain flood risk management considerations into the Variation. However, certain Material Alterations were made to Proposed Variation and adopted by the Elected Members as part of the adopted Variation. These Material Alterations provide for a range of incompatible uses within areas that are at elevated risk of flooding and are contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*. Consequently the Variation is contrary to these Guidelines and associated Circular.

8.5 Interrelationship between Environmental Components

The SEA Directive requires the Environmental Report to include information on the likely significant effects on the environment, including on issues such as biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

Likely significant effects on environmental components which are identified include those which are interrelated; implementation of the Variation will not affect the interrelationships between these components. The presence of significant interrelationships between environmental components is identified on Table 8.4.

Table 8.4 Presence of Interrelationships between Environmental Components

Component	Biodiversity, flora and fauna	Population and human health	Soil	Water	Air and Climatic factors	Material assets	Cultural heritage	Landscape
Biodiversity, flora and fauna		No	Yes	Yes	Yes	Yes	No	Yes
Population and human health			Yes	Yes	Yes	Yes	No	No
Soil				Yes	No	Yes	No	No
Water					Yes	Yes	No	No
Air and Climatic factors						Yes	No	No
Material assets							Yes	Yes
Cultural heritage								Yes
Landscape								

8.6 Vision

Variation text	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs - unlikely to be fully mitigated	No Likely interaction with status of SEOs
To promote Bearna as a sustainable and vibrant coastal village, which maintains its attractive character, capitalises on its existing and future accessibility strengths, while offering a pleasant environment for a growing community, for living, shopping, education, business, recreation and tourism, all balanced against the need to safeguard and enhance the environmental sensitivities of the area, for present and future generations to come.	B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	B1 B2 B3 B4 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1	
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for the Variation's high-level Vision is consistent with that provided for the selected alternatives described in Section 7. The interactions with SEOs reflect the effects detailed on Table 8.3.</p> <p>The vision primarily contributes towards the sustainable development and the protection and management of the environment that is already contributed towards by the existing Plan.</p>				

8.7 Village Centre and Urban Design Objectives

Variation text	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs - unlikely to be fully mitigated	No Likely interaction with status of SEOs
<p>Village Centre Objective <i>Objective VC 1 - Opportunity Sites</i> To promote and encourage the appropriate re-development of the opportunity sites identified in this plan to positively contribute to the vitality and character of Bearna village centre.</p> <p>Urban Design Objectives <i>Objective UD1 - Public Spaces and Streets</i> Promote the development of high quality public spaces consisting of streets, squares, parks and amenities connected by a network of pedestrian and cycling routes. Public spaces should have a high standard of design and street furniture that will create a coherent character for the area. This would include appropriately designed and located park benches, bus shelters, cycle storage facilities, refuse bins, signage, street sculpture, etc. but avoiding the over-proliferation of different elements and/or cluttering of public spaces.</p> <p><i>Objective UD2 - New Buildings</i> Building heights, widths and material finishes shall be in keeping with the character and scale of existing development in the area and shall be appropriate to the locality, site context and building function. A maximum building height of two half storeys will generally apply but reduced building heights will be required in visually vulnerable locations e.g. coastal side of the road. Increased building heights may be considered in exceptional circumstances where they contribute positively to the village character and design, subject to a high standard of urban design and have no adverse impacts on amenity.</p> <p>Objective UD3 - Coastal Views Ensure that any new developments on the seaside of the R336 is of a high design quality, suitably laid out, provide residual views and are appropriately restricted in height so as to effectively integrate with the coastal landscape of the Village centre.</p>	B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1	B1 B2 B3 B4 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1	W3 PHH1	
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for these Objectives is consistent with that provided for the selected alternatives described in Section 7. The Objectives will contribute towards the realisation of these alternatives and the interactions with SEOs reflect the effects detailed on Table 8.3.</p> <p>The approach to opportunity sites provided for by Village Centre Objective VC 1 is consistent with the framework for development in County Galway that is already provided for by the County Plan.</p> <p>Urban Design Objectives UD1-UD3 will contribute towards sustainable mobility and the protection and appropriate management of cultural heritage (including its context) and landscape designations - selected parts of these objectives are provided below in order to demonstrate this:</p> <ul style="list-style-type: none"> Objective UD1 - Public Spaces and Streets: "high quality public spaces", "pedestrian and cycling routes" and "avoiding the over-proliferation of different elements and/or cluttering of public spaces" Objective UD2 - New Buildings: "in keeping with the character and scale of existing development in the area and shall be appropriate to the locality, site context and building function" and "no adverse impacts on amenity" Objective UD3 - Coastal Views: "high design quality, suitably laid out, provide residual views and are appropriately restricted in height so as to effectively integrate with the coastal landscape of the Village centre" 				

8.8 Economic Development and Employment, Residential Development and Community Facilities Objectives

Variation text	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be fully mitigated	No Likely interaction with status of SEOs
<p>Economic Development and Employment Objectives <i>Objective ED1 - Retail and Commercial Development</i> The Village Centre (VC) zoning will remain the primary focus for the location of new retail and commercial development. The Planning Authority will ensure that the location of future retail development is consistent with the key policy principles and order of priority, as set out under Section 4.4 to 4.6 of the Guidelines for Planning Authorities Retail Planning 2012 (and any updated/superseding document) and will require Retail Impact Assessments, including details of the sequential approach and Design Statements for retail developments in accordance with the Retail Planning Guidelines.</p> <p><i>Objective ED2 - Business/Enterprise Development</i> Facilitate and encourage the establishment of business/enterprise, technology and industry uses, which are considered compatible with surrounding uses, on suitably zoned sites. Where such uses are developed adjacent to residential areas and community facilities, suitable buffer zones shall be provided as well as adequate screening in the form of planting and landscaping, as appropriate. The Business and Enterprise (BE) zoning shall be the primary focus for such uses.</p> <p><i>Objective ED3 - Proliferation of Any Individual Uses</i> Protect and enhance the vitality and viability of the village centre by ensuring that it remains the primary retail, commercial and mixed use centre in Bearna and prohibiting a proliferation of any individual use or other uses, which in the opinion of the Planning Authority does not contribute to the vitality and viability of village.</p> <p>Residential Development Objectives <i>Objective RD1 - Residential Development Phasing</i> Support the development of lands designated as Residential (Phase 1) within the lifetime of the Plan, subject to normal planning, access and servicing requirements, and reserve the lands designated as Residential (Phase 2) for the longer term growth needs of the village. Residential (Phase 2) lands are generally not developable for housing within the lifetime of this Plan, with the exception of the following developments, which may be considered by the Planning Authority, subject to a suitable evidence based case being made for the proposal:</p> <p>a) Single house developments for local family members on family owned land, subject to a 7 year occupancy clause.</p> <p>b) Non-residential developments that are appropriate to the site context, residential amenities, the existing pattern of development in the area and the policies and objectives in the Plan.</p> <p>c) Where it is apparent that Residential (Phase 1) lands cannot or will not be developed for residential purposes within the plan period, residential development may be considered in limited cases in a phased manner on suitable Residential (Phase 2) lands, in exceptional circumstances:</p> <ul style="list-style-type: none"> • Development on Residential (Phase 2) lands will normally only be considered where 50% of the lands in Residential (Phase 1) are committed to development. • Residential developments on Residential (Phase 2) lands will be subject to compliance with the Core Strategy in the Galway County Development Plan, the principles of proper planning and sustainable development, connectivity, infrastructure and public footpath and lighting to the village centre, the sequential approach, avoidance of leap-frog developments, and subject to meeting normal planning, environmental, access and servicing requirements. Developments will only be permitted where a substantiated evidence based case has been made to the satisfaction of the Planning Authority and the development will not prejudice the future use of the lands for the longer term growth needs of Bearna. <p><i>Objective RD 2 - Quality Housing Environments</i> Encourage the development of sustainable residential communities through the promotion of innovative, high quality building design and appropriate layouts, that prioritise walking, cycling and public transport options and provide for a high level of permeability, accessibility and connectivity to the existing built environment, services and facilities. In this regard, future residential development proposals will be in accordance with the principles set out in the DoEHLG document Sustainable Residential Development in Urban Areas 2009 and its companion document Urban Design Manual: A Best</p>	<p>B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>B1 B2 B3 B4 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>W3 PHH1</p>	

<p>Practice Guide for Planning Authorities 2009, or any updated version of these documents published during the lifetime of this plan and shall also have regard to the design principles as set out in the Design Manual for Urban Roads and Streets (2013) (or as updated).</p> <p><i>Objective RD 3 – Apartment Development</i> Facilitate the development of apartments at appropriate locations, e.g. in the village centre, and have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2015)(or as updated), the Sustainable Residential Developments in Urban Areas: Guidelines for Planning Authorities (2009) and Urban Design Manual: A Best Practice Guide – A Companion Document to the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009) in the assessment of this type of development.</p> <p>Community Facilities Objectives <i>Objective CF 1 - National School</i> Support the upgrading of Scoil Sheamus Naofa or its relocation to a more appropriate site within the plan boundary to facilitate increased pupil capacity, more expansive recreational facilities with improved and safer access.</p> <p><i>Objective CF 2 - Playground Facilities</i> Support the provision of playground facilities for children in appropriate locations that are accessible and have a suitable design and adequate surveillance, in particular, in the Village Centre and Community Facilities zoned lands of the Plan.</p> <p><i>Objective CF 3 - Community, Recreation and Amenity Facilities</i> Retain existing facilities and lands zoned for such uses, and prevent their change of use or redevelopment, unless it can be clearly demonstrated that the facility/lands are no longer required and that the new use or development contributes to the overall community needs and recreation and amenity needs of the Bearna area (this includes the existing tennis courts, school, church, handball alley, and local beaches).</p> <p><i>Objective CF 4 - Coastal Amenity Park</i> Support the creation of a Coastal Amenity Park, extending from Mag's Boreen to Lacklea Boreen, to serve the recreation and amenity needs of the Bearna community, to provide an appropriate public interface between the village and the coastline and to create a focal point and attractive setting for high quality tourism and mixed use development on adjoining lands. The design of any works being undertaken to achieve this objective shall be informed from the outset by ecological considerations.</p> <p><i>Objective CF 5 - Water-Related Facilities</i> Support the development of appropriate water-related facilities along the coastline, including the enhancement of existing beaches, the establishment of new beach areas, as appropriate, and the development of ancillary facilities.</p> <p><i>Objective CF 6 - Jetty/Marina Development</i> Support the preparation of a feasibility study for a jetty/marina development in the vicinity of Bearna Pier and any necessary marine/foreshore works to facilitate public access to and use of the area around the pier, such as breakwaters. This feasibility study shall take account of the requirements to comply with the European Habitats Directive.</p> <p><i>Objective CF 7 - Coastal Setback</i> Ensure a general building setback of 30m from the foreshore field boundary line to allow for the development of the coastal amenity park and a seaside promenade, cycleway, children's playground(s), landscaped amenity space and improved access routes to the local beaches, Bearna Pier and water-based activities.</p>				
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for these Objectives is consistent with that provided for the selected alternatives described in Section 7. The Objectives will contribute towards the realisation of these alternatives and the interactions with SEOs reflect the effects detailed on Table 8.3.</p> <p>The economic development provisions provided for by Economic Development and Employment Objectives ED1-ED3 are consistent with the framework for economic development in County Galway that is already provided for by the County Plan. These provisions contribute towards both sustainable development and the protection and management of the environment, for example:</p> <ul style="list-style-type: none"> • Objective ED1 - Retail and Commercial Development: "details of the sequential approach and Design Statements" • Objective ED2 - Business/Enterprise Development: "compatible with surrounding uses, on suitably zoned sites" and "Where such uses are developed adjacent to residential areas and community facilities, suitable buffer zones shall be provided as well as adequate screening in the form of planting and landscaping, as appropriate" • Objective ED3 - Proliferation of Any Individual Uses: "Protect and enhance the vitality and viability of the village centre" <p>By providing for new residential development over a relatively small number of sites that are already or most easily served by infrastructure and could serve demand for new development, the approach for Residential Development that is detailed by Residential Development Objectives and illustrated on accompanying land use zoning maps, would result increase significant positive effects arising and decrease the degree of potential conflicts (see Table 8.3 for details of effects). These provisions are consistent with the framework for residential development in County Galway that is already provided for by the County Plan and contribute towards both sustainable development and the protection and management of the environment, for example:</p>				

- Objective RD1 - Residential Development Phasing: "Support the development of lands designated as Residential (Phase 1) within the lifetime of the Plan, subject to normal planning, access and servicing requirements"
- Objective RD 2 - Quality Housing Environments: "sustainable residential communities", "high quality building design" and "prioritise walking, cycling and public transport options and provide for a high level of permeability, accessibility and connectivity to the existing built environment, services and facilities"
- Objective RD3 - Apartment Development: "appropriate locations" and "have regard to the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2015) (or as updated), the Sustainable Residential Developments in Urban Areas: Guidelines for Planning Authorities (2009) and Urban Design Manual: A Best Practice Guide – A Companion Document to the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009)".

The approach to community facilities provided for **Community Facilities Objectives CF 1 to CF 7** is consistent with the framework for community facilities development in County Galway that is already provided for by the County Plan. These provisions contribute towards both sustainable development and the protection and management of the environment, for example:

- Objective CF 1 - National School: "more expansive recreational facilities with improved and safer access"
- Objective CF 2 - Playground Facilities: "in appropriate locations that are accessible"
- Objective CF 3 - Community, Recreation and Amenity Facilities: "development contributes to the overall community needs and recreation and amenity needs of the Bearna area"
- Objective CF 4 - Coastal Amenity Park: "Support the creation of a Coastal Amenity Park" and "The design of any works being undertaken to achieve this objective shall be informed from the outset by ecological considerations"
- Objective CF 6: "This feasibility study shall take account of the requirements to comply with the European Habitats Directive"
- Objective CF 7 - Coastal Setback: "Ensure a general building setback of 30m from the foreshore field boundary line"

In combination with other provisions integrated into the Plan as varied, these economic development and employment, residential development and community facilities objectives would help to provide a concentration of growth within the existing settlement centre. This approach would contribute towards sustainable mobility and efficient use of resources. The construction and operation of all development has the potential to result in adverse effects upon all environmental components however these effects have been mitigated by provisions which have been integrated into the Plan as varied, including those which are identified in Section 9 of this report. The potential adverse effects (if unmitigated) are consistent with those detailed on Table 8.3.

8.9 Built and Natural Heritage and Cultural Heritage Objectives

Variation text	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs - unlikely to be fully mitigated	No Likely interaction with status of SEOs
<p>Built and Natural Heritage Objectives</p> <p><i>Objective BNH 1 – ACA Appraisal and Management Plan</i> Prepare and publish an Architectural Conservation Area Appraisal and Management Plan for the existing ACA along Pier Road, including Pier Road, the adjoining lands and structures identified and Bearna Pier, subject to the availability of resources.</p> <p><i>Objective BNH 2 - Natural Heritage Areas and Proposed Natural Heritage Areas</i> Protect Natural Heritage Areas and proposed Natural Heritage Areas in accordance with the requirements of the Wildlife Act 1976, the Wildlife (Amendment) Act 2000 and the Planning and Development Act 2000 (as amended).</p> <p><i>Objective BNH 3 - European Environmental Compliance</i> All proposed developments shall be in accordance with the Birds and Habitats Directives, Water Framework Directive and all other relevant EU Directives.</p> <p><i>Objective BNH 4 - Local Streams</i> Protect the riparian zones of watercourse systems throughout the plan area, recognising the benefits they provide in relation to flood risk management and in relation to the ecological integrity of watercourse systems. This will include a general 10 metre protection buffer from rivers within the plan area as measured from the near river bank, (this distance may be increased and decreased on a site by site basis, as appropriate).</p> <p>Cultural Heritage Objectives</p> <p><i>Objective CH1 - Fishing and Maritime Heritage</i> Ensure that the fishing and maritime heritage of the village is protected and that new developments respect and enhance the relationship of the village within the sea, in particular preserve the use of Bearna Pier as a fishing and boating facility in the village.</p> <p><i>Objective CH2 - Irish Language</i> Protect and promote the Irish language as the first community language of the Bearna area, including:</p> <ul style="list-style-type: none"> • Ensuring that the naming of developments are in Irish only and reflect the character of the area. • Encouraging the development of educational, recreational, tourism and business facilities that operate through the medium of the Irish language. • Signage shall be principally through the medium of Irish with internationally recognised symbols. <p><i>Objective CH3 - Language Enurement Clause</i> A Language Enurement Clause will be applied on a portion of residential units in development of two or more units in Bearna. The proportion of homes to which a language enurement clause will be a minimum of 20% or to the proportion of persons using Irish Language on a daily basis, in accordance with the latest published Census whichever is greater.</p>	<p>B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>			
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for these Objectives is consistent with that provided for the selected alternative development strategy in Section 7. The Objectives will contribute towards the realisation of this alternative development strategy and the interactions with SEOs reflect the effects detailed on Table 8.3.</p> <p>Protection and management of the environment are the primary focus of the Built and Natural Heritage Objectives and the Cultural Heritage Objectives, with associated positive effects consistent with those detailed on Table 8.3.</p> <p>Although Objective CH2 (Irish Language) and Objective CH3 (Language Enurement Clause) will contribute towards the continuing sustainable development of Bearna, they will not result in significant environmental interactions as they are focused upon non-tangible linguistic heritage.</p>				

8.10 Transport and Movement, Flood and Flood Related and Infrastructure and Services Objectives

Variation text	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs - unlikely to be fully mitigated	No Likely interaction with status of SEOs
<p>Transport and Movement Objectives</p> <p><i>Objective RT 1 - Transport Network</i> Facilitate improvements to the existing transportation network in Bearna village to promote the principles of National Smarter Travel, including the following road-related measures:</p> <ul style="list-style-type: none"> • Preparation and implementation of a traffic management plan for Bearna • Provision of radar control speed signs along the R336 within the plan area, in particular in advance of the national school. • Provision of tactile paving and dished kerbs at all crossing points to facilitate ease of access for the mobility impaired. • Providing raised pavement areas at various junctions along the existing R336, in order to ensure slow traffic speeds. • Providing advance radar speed analyses to activate traffic lights, where excessive speeds noted. <p><i>Objective RT 2 - New Village Street</i> Support the completion of the proposed new Village Street (Inner Relief Road) north of the existing R336 and prohibit any development that would affect the future construction of the approved route.</p> <p><i>Objective RT 3 - Public Footpath & Lighting Network</i></p> <ol style="list-style-type: none"> Support improvements to the existing public footpaths network within the plan area. New development shall be required to connect to the footpath and public lighting network that currently serves the village centre. Support the provision of footpaths and public lighting from the existing residential development to the village centre. In order to protect light sensitive species such as bats, lighting fixtures should provide only the amount of light necessary for personal safety and should be designed so as to avoid creating glare or emitting light above a horizontal plane. Facilitate the provision of pedestrian crossings adjacent to the national school, residential areas and at other appropriate locations within the plan area, as required. <p><i>Objective RT4 - Schools</i> Promote and facilitate greater ease of traffic movement and safe routes to the national school, in partnership with the local school, and ensure that the existing school has a safe drop off/collection facilities for pedestrians, cyclists and vehicles and adequate and appropriately located staff parking.</p> <p><i>Objective RT5 - Bus Services, Stops and Shelters</i> Promote an improved bus service in Bearna and investigate the potential to provide more frequent stops and bus shelters along the R336 and new Village Street.</p> <p>Flood and Flood Related Objectives</p> <p><i>Objective CCF 1 - Flood Zones and Appropriate Land Uses</i> Protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/land uses into the appropriate Flood Zone in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (or any superseding document) and the guidance contained in the Flood Risk Management Guidelines (DM Guidelines DM 2). Where a development/land use is proposed that is inappropriate within the Flood Zone, then the development proposal will need to be accompanied by a Development Management Justification Test and Site-Specific Flood Risk Assessment in accordance with the criteria set out under with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 & Circular PL2/2014 (as updated/superseded). In Flood Zone C, where the probability of flooding is low (less than 0.1%, Flood Zone C), the developer should satisfy him or herself that the probability of flooding is appropriate to the development being proposed.</p> <p><i>Objective CCF 2 - Specific Flood Risk Locations</i> Planning applications on lands in Bearna identified within pluvial PFRA areas outside of Indicative Flood Zone A on Flood Maps for Bearna shall be accompanied by a Site Specific Flood Risk Assessment that corresponds with that outlined under Chapter 5 'Flooding and Development Management' of The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009). Such assessments shall be prepared by suitably qualified experts with hydrological experience and shall quantify the risks and effects of any necessary mitigation, together with the measures needed</p>	<p>B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>B1 B2 B3 B4 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>W3 PHH1</p>	

<p>or proposed to manage residual risks.</p> <p><i>Objective CCF 3 - Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones</i> Ensure that applications to existing developments in flood vulnerable zones shall provide details of structural and non-structural risk management measures to include, but not be limited to specifications of the following - floor levels, internal layout, flood resilient construction, flood resistant construction, emergency response planning, access and egress during flood events.</p> <p><i>Objective CCF 4 - Water Bodies and Watercourses</i> The existing streams in Bearna shall be protected as follows:</p> <ul style="list-style-type: none"> • Restore and reinstate streams or portions of streams that have been filled in or covered over as part of new developments. • Culverting of the streams shall be restricted in new developments except in the case where it can be demonstrated that it mitigates against flooding and/or where it can add to and enhance the overall enjoyment and amenity of the development. <p><i>Objective CCF 5 - Coastal Protection</i> Promote the use of soft approaches to coastal protection that work with the natural features and processes at the foreshore.</p> <p><i>Objective CCF6- Inappropriate Development on Flood Zones</i> Where a development/land use is proposed within any area subject to this objective the development proposal will need to be accompanied by a detailed hydrological assessment and robust SUDS design which demonstrates the capacity to withstand potential flood events to maintain water quality and avoid potential effects to ecological features.</p> <ul style="list-style-type: none"> • Any development proposals should be considered with caution and will be required to comply with The Planning System and Flood Risk Management Guidelines for Planning Authorities/Circular PL2/2014 & the associated Development Management Justification Test. • Climate Change should be duly considered in any development proposal. • Protect the riparian zones of watercourse systems throughout the plan area through a general 10 metre protection buffer from rivers within the plan area as measured from the near river bank, (this distance may be increased and decreased on a site by site basis, as appropriate). • Any development proposals submitted for this site will require a detailed ecological report (s), carried out by suitably qualified personnel for the purposes of informing Appropriate Assessment Screening by Galway County Council, the competent authority (in accordance with Objective DS 6 of the Galway CDP 2015-21). • The relevant lands will be outlined and flagged with a symbol on the land use zoning map and on the GIS system of Galway County Council so that staff and the public are aware of the special conditions/constraints attached. • A briefing will be provided to relevant staff within Galway County Council on the special conditions and constraints on relevant lands <p>Infrastructure and Services Objectives <i>Objective IS1 - Wastewater Treatment Plant</i> Support the provision of a new stand-alone tertiary wastewater treatment plant to serve existing and future developments in Bearna.</p>				
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for these Objectives is consistent with that provided for the selected alternatives described in Section 7. The Objectives will contribute towards the realisation of this alternative development strategy and the interactions with SEOs reflect the effects detailed on Table 8.3.</p> <p>Transport and Movement Objectives are consistent with the framework for transport provision included within the existing Development Plan and contribute towards sustainable mobility (with associated positive effects on energy usage and greenhouse gas and noise emissions to air). Examples of provisions that contribute towards sustainable mobility include:</p> <ul style="list-style-type: none"> • Objective RT 1 - Transport Network: "implementation of a traffic management plan" and "radar control speed signs" • Objective RT 3 - Public Footpath & Lighting Network: "improvements to the existing public footpaths network", "New development shall be required to connect to the footpath and public lighting network" and "Support the provision of footpaths and public lighting from the existing residential development to the village centre" • Objective RT4 - Schools: "safe drop off/collection facilities for pedestrians, cyclists" • Objective RT5 - Bus Services, Stops and Shelters: "more frequent stops and bus shelters along the R336 and new Village Street" <p>Land Use Zoning Objective LU7 (Transport Infrastructure) requires that new roads "shall be subject to needs assessment and detailed corridor and route selection processes taking into account, inter alia, environmental constraints and opportunities."</p> <p>Flood and Flood Related Objectives CCF1-CCF5 provide for an approach to flood risk management that is consistent with the requirements of the Flood Risk Management Guidelines and associated Circular PL 2/2014. However the Land Use Zoning provided for by the Variation is contrary to the requirements of these Guidelines. Objective CCF6 was included within the Variation on foot of a recommendation from the AA process in order to avoid potential effects on European Sites arising from zoning within floodplains.</p>				

Objective IS1 (Wastewater Treatment Plant) provides for the provision of a new tertiary wastewater treatment plant to serve existing and future developments in Bearna. In addition to facilitating the orderly development of Bearna as part of the preferred alternative development strategy, the appropriate treatment of waste water would contribute towards the protection of various environmental components including: human health, ecology, the status of waters and soil. There would be potential for significant adverse environmental effects upon various environmental components to arise during both construction and operation (outflow has the potential to conflict with various components including the status of water bodies, aquatic ecology and human health for example). Such effects would be mitigated by measures including those which have been integrated into the Plan as varied.

8.11 Land Use Zoning Objectives

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs - likely to be mitigated	Probable Conflict with status of SEOs - unlikely to be fully mitigated	No Likely interaction with status of SEOs
<p>The Variation includes various land use zoning objectives which have been applied in a way that is consistent with the selected alternatives. The detailed text associated with the Land Use Zoning Objectives is provided in the Variation document and its application is shown on Figure 8.1 in this report. Land Use Zoning Objectives are as follows:</p> <ul style="list-style-type: none"> Objective LU1 - Village centre (VC) Objective LU2 - Residential (R) Objective LU3 - Business & Enterprise (BE) Objective LU4 - Community Facilities (CF) Objective LU5 - Open Spaces/Recreation and Amenity (OS) Objective LU6 - Public Utilities (PU) Objective LU7 - Transport Infrastructure (TI) Objective LU8 - Non Conforming Uses Objective LU9 - Constrained Land Use Zone (CL) Objective LU10 - Coastal Edge Zoning (CE) 	<p>B1 B2 B3 B4 PHH1 S1 W1 W2 W3 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>B1 B2 B3 B4 S1 W1 W2 M1 M2 M3 C1 CH1 CH2 L1</p>	<p>W3 PHH1</p>	
<p>Assessment Commentary:</p> <p>The evaluation against Strategic Environmental Objectives (SEOs) provided for the Land Use Zoning Objectives is consistent with that provided for the selected alternative at Section 7. The interactions with SEOs reflect the effects detailed on Table 8.3. The application of the zoning, in combination with other provisions from the Plan as varied, would help to ensure that development is served by infrastructure, including infrastructure and services, some of which is already in place.</p> <p>The land use zoning provided for the Variation (as a result of Material Alterations No. 1-6):</p> <ul style="list-style-type: none"> Provides for a range of incompatible uses within areas that are at elevated risk of flooding (these areas were identified by the Strategic Flood Risk Assessment); Provides incompatible uses that are contrary to proper and sustainable flood risk management and contrary to The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) and Circular PL2/14; Facilitates development that would result in a heightened risk of flooding and associated adverse effects on people and their assets. Such effects range from loss of life, to damage to property, to loss of income; and Would result in elevated potential for water quality to be adversely affected (as a result of flooding of water treatment systems and collection networks and flooding of unknown substances stored onsite). Polluted or contaminated waters would have the potential to adversely affect human health and biodiversity and flora and fauna (including designated European Sites). <p>Taking into account the considerable extent of lands involved, the land use zoning provided for the Variation (as a result of Material Alterations No. 1-7):</p> <ul style="list-style-type: none"> Would be likely to result in cumulative adverse effects on all environmental components as a result of the provision of unnecessary zoning (for which there is no established planning need). <p>In addition to being accompanied by a Land Use Matrix table, the approach provided by the Land Use Zoning Objectives and assessed above is supported by two Development Management Guidelines as follows:</p> <ul style="list-style-type: none"> DM Guideline DM1 - "Development Densities" that details development density guidance indicating the range of densities generally considered appropriate in the various land use zones and in different residential locations within the Plan area. DM Guideline FL 1 "Flood Zones and Appropriate Land Uses" that provides additional detail on the types of land uses appropriate in Flood Zones A, B and C 				

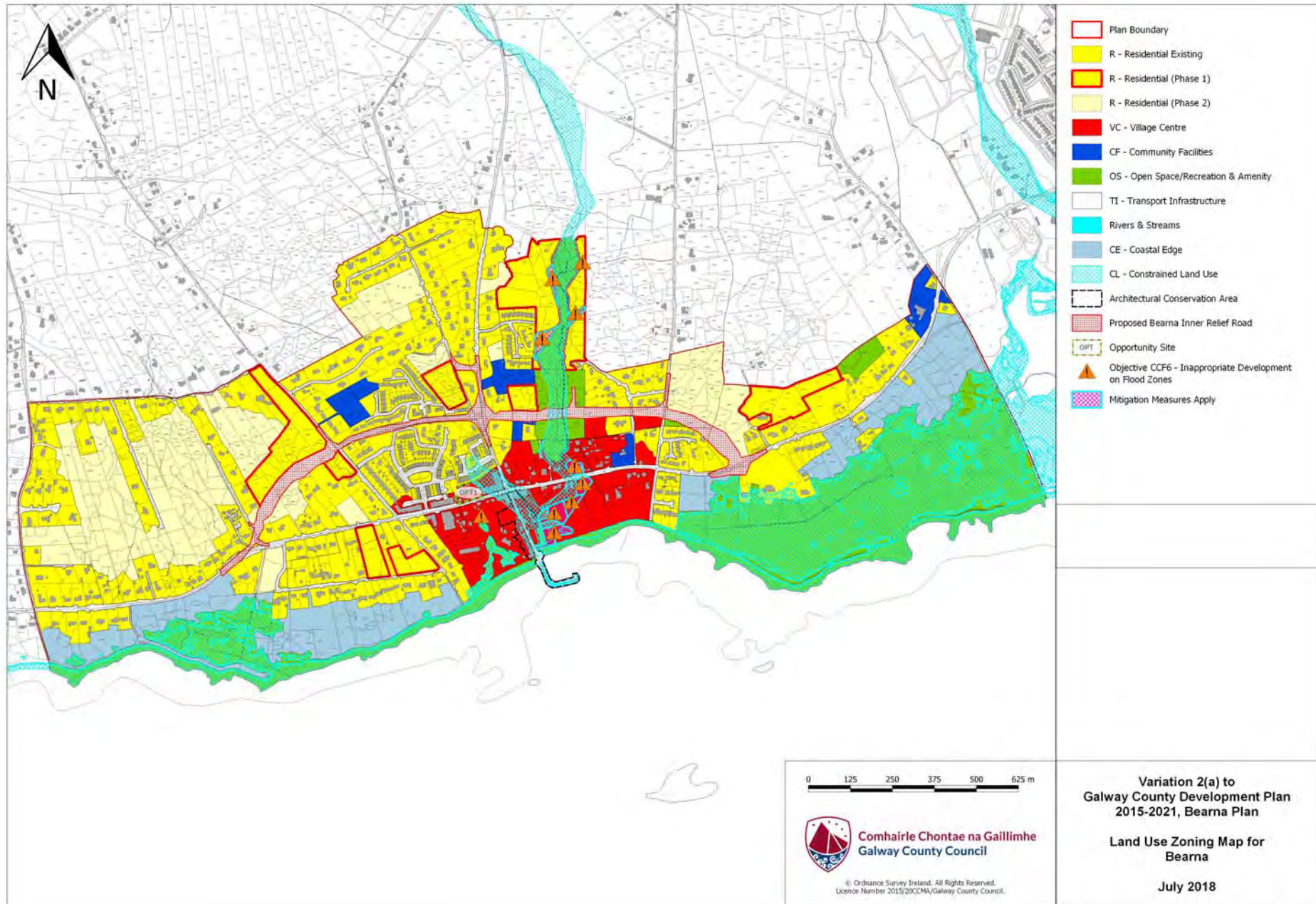


Figure 8.1 Land Use Zoning Map for Adopted Variation 2 (a)

CAAS for Galway County Council

Section 9 Mitigation Measures

9.1 Introduction

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan, as varied.

Various environmental sensitivities and issues have been communicated to the Council through the various SEA, AA and SFRA processes undertaken for the original 2015 Plan, Variation No. 1 and Variation 2 (a).

By integrating certain recommendations into the Variation the Council will contribute towards environmental protection and management. However, certain Material Alterations were made to Proposed Variation and adopted by the Elected Members as part of the adopted Variation. These Material Alterations provide for a range of incompatible uses within areas that are at elevated risk of flooding and are contrary to *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (2009) and *Circular PL2/14*. Consequently the Variation is contrary to these Guidelines and associated Circular.

9.2 Integration of Environmental Considerations

Table 9.1 links key mitigation measure(s) - that have been integrated into the Plan (as varied) and the Variation 2 (a) - to the likely significant effects of implementing the Variation, if unmitigated. The integration of these measures into the Variation occurred over a number of iterations and was informed by, inter alia, various communications through the SEA, AA and SFRA processes.

The measures generally benefit multiple environmental components i.e. a measure providing for the protection of biodiversity, flora and fauna could beneficially impact upon the minimisation of flood risk and the protection of human health, for example.

The reference codes are those which accompany the relevant measures in the Plan (as varied) and Variation 2 (a).

Table 9.1 Integration of Environmental Considerations

Likely Significant Effect, if unmitigated	Mitigation Measures, including:
<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; Habitat loss, fragmentation and deterioration, including patch size and edge effects; and Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species. 	<p>Measures from the Variation</p> <ul style="list-style-type: none"> Objective CF 4 - Coastal Amenity Park Objective CF 6 - Jetty/Marina Development Objective CF 7 - Coastal Setback Objective BNH 2 - Natural Heritage Areas and Proposed Natural Heritage Areas Objective BNH 3 - European Environmental Compliance Objective RT3 - Public Footpath & Lighting Network Objective CCF6- Inappropriate Development on Flood Zones <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> Policies NHB 1, NHB 2, NHB 3, NHB 5, NHB 6, NHB 7 and NHB 8 Objectives DS 6, DS 9, EQ1, EQ 4, ICT 1, NHB 1, NHB 2, NHB 4, NHB 5, NHB 6, NHB 7, NHB 8, NHB 10, NHB 11, NHB 13, AFF 6 and DS10 Also see various measures providing for populations in rural and supporting areas.
<p>Potential interactions if effects upon environmental vectors such as water and air are not mitigated</p>	<p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> Policy CC 8 Objectives TI 12 and EQ 2 Also see measures related to soil, water quality, flooding, waste water treatment and drinking water supply and quality.
<p>Damage to the hydrogeological and ecological function of the soil resource</p>	<p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> Objective NHB12 Also see measures related to water quality and waste water treatment.
<p>Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology</p> <p>Increase in the risk of flooding</p>	<p>Measures from the Variation</p> <ul style="list-style-type: none"> Objective BNH 4 - Local Streams Objective CCF1 - Flood Zones and Appropriate Land Uses Objective CCF2 - Coastal Flooding Objective CCF3 - Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones Objective CCF4 - Water Bodies and Watercourses Objective CCF5 - Coastal Protection Objective LU9 - Constrained Land Use Zone (CL) DM Guideline FL1 – Flood Zones and Appropriate Land Uses <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> Policies NHB 4, AFF 5, FL 1, FL 2, FL 3, FL 4 and FL 5 Objectives NHB 3, NHB 8, NHB 10, NHB12, EQ1, AFF 5, AFF 6, AFF9, CS 4, WS 1, WS 2, WS 7, WS 9, WS 11, WW 1, FL 1, FL 2, FL 3, FL 4, FL 5, FL 6, DS 7, DS 8 and DS 9 and RA 1
<p>Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts)</p> <p>Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts)</p> <p>Increases in waste levels</p>	<p>Measures from the Variation</p> <ul style="list-style-type: none"> Objective IS1 - Wastewater Treatment Plant <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> Policies WS 1 WS 2 WS 3 WS 4 WS 5 WS 6 WW 1 WM1 WM2 Objectives WS 1, WS 2, WS 3, WS 4, WS 5, WS 6, WS 7, WS 8, WS 9, WS 10, WS 11, WS 12, WS 13, WS 14, WS 15, WW 1, WW 2, WW 3, WW 4, WW 5, WW 6, WW 7, WW 8, WW 10, WM 1, WM 2, WM 3, WM 4, WM 5, WM 6, CS 4, RHO -5 and EDT 5

Likely Significant Effect, if unmitigated	Mitigation Measures, including:
<p>Emissions to air including greenhouse gas emissions and other emissions.</p> <p>Climate adaptation interactions</p>	<p>Measures from the Variation</p> <ul style="list-style-type: none"> • Objective RT1 - Transport Network • Objective RT3 - Public Footpath & Lighting Network • Objective RT5 - Bus Services, Stops and Shelters • Objective LU7 - Transport Infrastructure (TI) • DM Guideline DM1 – Development Densities <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> • Strategic Aims 6, 7 and 11 • Policies CC 1, CC2, CC3, CC4, CC5, CC6, CC 7, TI 1, TI 2, TI 3 and TI 4 • Objectives DS 1, DS 2, DS 3, DS 8, CS 3, CS 5, TI 1, TI 2, TI 3, TI 4, TI 16, TI 17, TI 18, TI 19, TI 20, TI 21, DS 8, CC1, CC 2, CC3, CC 4 and CC5
<p>Effects on entries to the Record of Monuments and Places and other archaeological heritage</p> <p>Effects on entries to the Records of Protected Structures, Architectural Conservation Areas and other architectural heritage</p>	<p>Measures from the Variation</p> <ul style="list-style-type: none"> • Objective BNH 1 – ACA Appraisal and Management Plan <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> • Policies AH 1, AH 2, ARC 1, ARC 2, ARC 3, ARC 4 and ARC 5 • Objectives AH 1, AH 2, AH 3, AH 4, AH 5, AH 6, AH 7, AH 8, AH 9, AH 10, AH 11, ARC 1, ARC 2, ARC 3, ARC 4, ARC 5, ARC 6 and ARC 7
<p>Occurrence of adverse visual impacts</p>	<p>Measures from the Variation</p> <ul style="list-style-type: none"> • Objective UD3 - Coastal Views • Objective CF 7 - Coastal Setback <p>Measures from the Plan as varied</p> <ul style="list-style-type: none"> • Policy LCM 1 • Objectives LCM 1, LCM 2, LCM 3, FPV 1 and WH 1

Section 10 Monitoring Measures

10.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures which will be used in order to monitor the likely significant effects of implementing the Plan, as varied.

Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

10.2 Indicators and Targets

Monitoring is based around indicators which allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives identified in Section 5 and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) which were identified with regard to the relevant strategic actions.

Table 10.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental effects, if unmitigated, of implementing the Plan, as varied.

The Monitoring Programme may be updated to deal with specific environmental issues - including unforeseen effects - as they arise. Such issues may be identified by the Council or identified to the Council by other agencies.

10.3 Sources

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office.

Internal monitoring of the environmental effects of grants of permission in the Council will provide monitoring of various indicators and targets on a *grant of permission* basis.

The likely significant effects of development proposals on environmental sensitivities are further determined during the development management process. By documenting this determination - e.g. whether a proposed development will impact upon a Protected Structure, for example - while granting permissions, or at a later date, the requirement to monitor the effects of implementing the Plan (as varied) can be achieved.

Where significant effects - including positive, negative, cumulative and indirect - have the potential to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

10.4 Reporting

Article 10 of the SEA Directive requires Member States to monitor the significant environmental effects of the implementation of plans "*in order, inter alia, to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action.*" Existing monitoring arrangements may be used if appropriate, to avoid duplication of monitoring³⁶.

A stand-alone Monitoring Report on the significant environmental effects of implementing the County Development Plan (as varied), including Variation 2 (a), will be prepared in advance of the review of the County Development Plan.

³⁶ Chapter 7 Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment Guidelines for Regional Authorities and Planning Authorities. DoEHLG 2004

10.5 Thresholds and Corrective Action

Thresholds at which corrective action will be considered include:

- The occurrence of flood events;
- Court cases taken by the Department of Culture, Heritage and the Gaeltacht regarding impacts upon archaeological heritage including entries to the RMP;
- Complaints received from statutory consultees regarding avoidable environmental impacts resulting from development which is granted permission under the Plan, as varied; and
- Fish kills.

Table 10.1 Selected Indicators, Targets and Monitoring Sources

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	B1: Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the Plan (as varied) ³⁷	<ul style="list-style-type: none"> Internal monitoring of environmental likely significant effects of grants of permission (grant by grant). Department of Culture, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years). National Monitoring Report under Article 12 of the Birds Directive. Consultations with the NPWS (at monitoring evaluation - see Section 10.4).
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan (as varied)	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Plan (as varied)	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). CORINE mapping resurvey (every c. 5 years).
	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan (as varied)	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan (as varied)	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). Consultations with the NPWS (at monitoring evaluation - see Section 10.4).
	B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976.	B3ii: No significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976	
	B4: Population of the county involved in land management	B4: Sustain the population of the county involved in land management	<ul style="list-style-type: none"> CSO Population Data (every c. 5 years).
Population and Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan (as varied)	<ul style="list-style-type: none"> Consultations with EPA and Health Service Executive (at monitoring evaluation - see Section 10.4).
Soil	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant).

³⁷ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- (a) no alternative solution available;
- (b) imperative reasons of overriding public interest for the plan to proceed; and
- (c) adequate compensatory measures in place.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Water	W1i: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009) W1ii: Mandatory and Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)	W1i: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve <i>good status</i> ³⁸ W1ii: To achieve - as a minimum - Mandatory values and, where possible, to achieve Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland. EPA Quality of Bathing Water in Ireland reports.
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). Data issued under the Water Framework Directive Monitoring Programme for Ireland (multi-annual).
	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk in compliance with <i>The Planning System and Flood Risk Management Guidelines for Planning Authorities</i>	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant).
Material Assets	M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan (as varied)	M1: All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan (as varied)	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant).
	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan (as varied)	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan (as varied)	<ul style="list-style-type: none"> EPA The Provision and Quality of Drinking Water in Ireland reports (multi-annual). EPA Remedial Action List (every quarter).
	M3i: Total collected and brought household waste M3ii: Packaging recovered (t) by self-complying packagers	M3i: Minimise increases in and, where possible, reduce household waste generation M3ii: Maximise increases in packaging recovered (t) by self-complying packagers	<ul style="list-style-type: none"> EPA National Waste Reports EPA Ireland's Environment Reports
Air and Climatic Factors	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means	C1: An increase in the percentage of the population travelling to work, school or college by public transport or non-mechanical means	<ul style="list-style-type: none"> CSO Population Data (every c. 5 years).

³⁸ Good status as defined by the WFD equates to approximately the following in the current national schemes of classification as set out by the EPA:

- *Q4* in the biological classification of *rivers*;
- *Mesotrophic* in the classification of *lakes*; and
- *Unpolluted status* in the Assessment of Trophic Status of Estuaries and Bays in Ireland (ATSEBI).

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Cultural Heritage	CH1: Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and the context of the above within the surrounding landscape where relevant) – protected from adverse effects resulting from development which is granted permission under the Plan (as varied)	CH1: Protect entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and their context of the above within the surrounding landscape where relevant) from adverse effects resulting from development which is granted permission under the Plan (as varied)	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). • Consultation with Department of Culture, Heritage and the Gaeltacht (at monitoring evaluation - see Section 10.4).
	CH2: Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from adverse effects resulting from development which is granted permission under the Plan (as varied)	CH2: Protect entries to the Record of Protected Structures and Architectural Conservation Areas and their context from adverse effects resulting from development which is granted permission under the Plan (as varied)	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). • Consultation with Department of Culture, Heritage and the Gaeltacht (at monitoring evaluation - see Section 10.4).
Landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views - resulting from development which is granted permission under the Plan (as varied)	L1: No developments permitted which result in avoidable impacts on the landscape - especially with regard to the County's landscapes which are most valuable and most sensitive to change and protected focal points and views - resulting from development which is granted permission under the Plan (as varied)	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission (grant by grant).

Appendix I Relationship with Legislation and Other Plans and Programmes

This appendix is not intended to be a full and comprehensive review of EU Directives, the transposing regulations or the regulatory framework for environmental protection and management. The information is not exhaustive and it is recommended to consult the Directive, Regulation, Plan or Programme to become familiar with the full details of each.

European			
Directive/ Plan/ Programme	Highest Level Aim/ Purpose/ Objective	Lower level objectives, actions etc.	Relevance to the Plan as varied
EU Green Infrastructure Strategy	Aims to create a robust enabling framework in order to promote and facilitate Green Infrastructure (GI) projects	<ul style="list-style-type: none"> Promoting GI in the main EU policy areas; Supporting EU-level GI projects; Improving access to finance for GI projects, and Improving information and promoting innovation 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
UN Kyoto Protocol (2ND Kyoto Period), the Second European Climate Change Programme (ECCP II), Paris climate conference (COP21) 2015	<p>The UN Kyoto Protocol set of policy measures to reduce greenhouse gas emissions</p> <p>The Second European Climate Change Programme (ECCP II) aims to identify and develop all the necessary elements of an EU strategy to implement the Kyoto Protocol</p> <p>At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.</p>	<ul style="list-style-type: none"> The Kyoto Protocol is implemented through the European Climate Change Programme (ECCP II) EU member states implement measures to improve on or compliment the specified measures and policies arising from the ECCP Under COP21, governments agreed to come together every 5 years to set more ambitious targets as required by science; report to each other and the public on how well they are doing to implement their targets; track progress towards the long-term goal through a robust transparency and accountability system 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
EU 2020 climate and energy package	<ul style="list-style-type: none"> Binding legislation which aims to ensure the European Union meets its climate and energy targets for 2020 Aims to achieve a 20% reduction in EU greenhouse gas emissions from 1990 levels Aims to raise the share of EU energy consumption produced from renewable resources to 20% Achieve a 20% improvement in the EU's energy efficiency 	<p>Four pieces of complimentary legislation:</p> <ul style="list-style-type: none"> Reform of the EU Emissions Trading System (EU ETS) to include a cap on emission allowances in addition to existing system of national caps Member States have agreed national targets for non-EU ETS emissions from countries outside the EU Meet the national renewable energy targets of 16% for Ireland by 2020 Preparing a legal framework for technologies in carbon capture and storage 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Habitats Directive (92/43/EEC)	<ul style="list-style-type: none"> Promote the preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora Contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora Maintain or restore to favourable conservation status, natural habitats and species of wild fauna and flora of Community interest Promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. 	<ul style="list-style-type: none"> Propose and protect sites of importance to habitats, plant and animal species Establish a network of European sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range Carry out comprehensive assessment of habitat types and species present Establish a system of strict protection for the animal species and plant species listed in Annex IV 	The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations

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<p>Birds Directive (2009/147/EC)</p>	<ul style="list-style-type: none"> • Conserve all species of naturally occurring birds in the wild state including their eggs, nests and habitats • Protect, manage and control these species and comply with regulations relating to their exploitation • The species included in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution 	<ul style="list-style-type: none"> • Preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex 1. • Preserve, maintain and establish biotopes and habitats to include the creation of protected areas (Special Protection Areas); ensure the upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones, re-establish destroyed biotopes and creation of biotopes • Measures for regularly occurring migratory species not listed in Annex I is required as regards their breeding, moulting and wintering areas and staging posts along their migration routes. The protection of wetlands and particularly wetlands of international importance. 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>European Union Biodiversity Strategy to 2020</p>	<ul style="list-style-type: none"> • Aims to halt or reverse biodiversity loss and speed up the EU's transition towards a resource efficient and green economy • Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible 	<ul style="list-style-type: none"> • Outlines six targets and twenty actions to aid European in halting the loss to biodiversity and eco-system services • The six targets cover: <ul style="list-style-type: none"> ○ Full implementation of EU nature legislation to protect biodiversity ○ Maintaining, enhancing and protecting for ecosystems, and green infrastructure ○ Ensuring sustainable agriculture, and forestry ○ Sustainable management of fish stocks ○ Reducing invasive alien species ○ Addressing the global need to contribute towards averting global biodiversity loss 	<p>To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management</p>
<p>The Clean Air for Europe Directive (2008/50/EC)</p> <p>Fourth Daughter Directive (2004/107/EC)</p>	<ul style="list-style-type: none"> • The CAFE Directive merges existing legislation into a single directive (except for the fourth daughter directive) • Sets new air quality objectives for PM2.5 (fine particles) including the limit value and exposure related objectives • Accounts for the possibility to discount natural sources of pollution when assessing compliance against limit values • Allows the possibility for time extensions of three years (PM10) or up to five years (NO2, benzene) for complying with limit values, based on conditions and the assessment by the European Commission. • The Fourth Daughter Directive lists pollutants, target values and monitoring requirements for the following: arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air 	<ul style="list-style-type: none"> • Sets objectives for ambient air quality • designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole • Aims to assess the ambient air quality in Member States on the basis of common methods and criteria; • Obtains information on ambient air quality in order to help combat air pollution and nuisance and to monitor long-term trends and improvements resulting from national and Community measures; • Ensures that such information on ambient air quality is made available to the public; • Aims to maintain air quality where it is good and improving it in other cases; • Aims to promote increased cooperation between the Member States in reducing air pollution. 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Noise Directive 2002/49/EC</p>	<p>The Noise Directive - Directive 2002/49/EC relating to the assessment and management of environmental noise - is part of an EU strategy setting out to reduce the number of people affected by noise in the longer term and to provide a framework for developing existing Community policy on noise reduction from source.</p>	<p>The Directive requires competent authorities in Member States to:</p> <ul style="list-style-type: none"> • Draw up strategic noise maps for major roads, railways, airports and agglomerations, using harmonised noise indicators and use these maps to assess the number of people which may be impacted upon as a result of excessive noise levels; • Draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good; and • Inform and consult the public about noise exposure, its effects, and the measures considered to address noise. <p>The Directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities.</p>	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

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<p>Floods Directive (2007/60/EC)</p>	<ul style="list-style-type: none"> Establishes a framework for the assessment and management of flood risks Reduce adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community 	<ul style="list-style-type: none"> Assess all water courses and coast lines at risk from flooding through Flood Risk Assessment Prepare flood hazard maps and flood risk maps outlining the extent or potential of flooding and assets and humans at risk in these areas at River Basin District level (Article 3(2) (b)) and areas covered by Article 5(1) and Article 13(1) (b) in accordance with paragraphs 2 and 3 Implement flood risk management plans and take adequate and coordinated measures to reduce flood risk for the areas covered by the Articles listed above Inform the public and allow the public to participate in planning process 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Water Framework Directive (2000/60/EC)</p>	<ul style="list-style-type: none"> Establish a framework for the protection of water bodies to include inland surface waters, transitional waters, coastal waters and groundwater and their dependent wildlife and habitats Preserve and prevent the deterioration of water status and where necessary improve and maintain "good status" of water bodies Promote sustainable water usage The Water Framework Directive repealed the following Directives: <ul style="list-style-type: none"> The Drinking Water Abstraction Directive Sampling Drinking Water Directive Exchange of Information on Quality of Surface Freshwater Directive Shellfish Directive Freshwater Fish Directive Groundwater (Dangerous Substances) Directive Dangerous Substances Directive 	<ul style="list-style-type: none"> Protect, enhance and restore all water bodies and meet the environmental objectives outlined in Article 4 of the Directive Achieve "good status" for all waters Manage water bodies based on identifying and establishing river basins districts Involve the public and streamline legislation Prepare and implement a River Basin Management Plan for each river basin districts identified and a Register of Protected Areas Establish a programme of monitoring for surface water status, groundwater status and protected areas Recover costs for water services 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Groundwater Directive (2006/118/EC)</p>	<ul style="list-style-type: none"> Protect, control and conserve groundwater Prevent the deterioration of the status of all bodies of groundwater Implements measures to prevent and control groundwater pollution, including criteria for assessing good groundwater chemical status and criteria for the identification of significant and sustained upward trends and for the definition of starting points for trend reversals. 	<ul style="list-style-type: none"> Meet minimum groundwater standards listed in Annex 1 of Directive Meet threshold values adopted by national legislation for the pollutants, groups of pollutants and indicators of pollution which have been identified as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk, also taking into account Part B of Annex II 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>Drinking Water Directive (98/83/EC)</p>	<ul style="list-style-type: none"> Improve and maintain the quality of water intended for human consumption Protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean 	<ul style="list-style-type: none"> Set values applicable to water intended for human consumption for the parameters set out in Annex I Set values for additional parameters not included in Annex I, where the protection of human health within national territory or part of it so requires. The values set should, as a minimum, satisfy the requirements of Article 4(1) (a) Implement all measures necessary to ensure that regular monitoring of the quality of water intended for human consumption is carried out, in order to check that the water available to consumers meets the requirements of this Directive and in particular the parametric values set in accordance with Article 5 Ensure that any failure to meet the parametric values set in accordance with Article 5 is immediately investigated in order to identify the cause Ensure that the necessary remedial action is taken as soon as possible to 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>

		<p>restore its quality and shall give priority to their enforcement action</p> <ul style="list-style-type: none"> • Undertake remedial action to restore the quality of the water where necessary to protect human health • Notify consumers when remedial action is being undertaken except where the competent authorities consider the non-compliance with the parametric value to be trivial 	
Urban Waste Water Treatment Directive (91/271/EEC)	<ul style="list-style-type: none"> • This Directive concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors • The objective of the Directive is to protect the environment from the adverse effects of waste water discharges 	<ul style="list-style-type: none"> • Urban waste water entering collecting systems shall before discharge, be subject to secondary treatment • Annex II requires the designation of areas sensitive to eutrophication which receive water discharges • Establishes minimum requirements for urban waste water collection and treatment systems in specified agglomerations to include special requirements for sensitive areas and certain industrial sectors 	The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations
Environmental Liability Directive (2004/35/EC)	<ul style="list-style-type: none"> • Establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage 	<ul style="list-style-type: none"> • Relates to environmental damage caused by any of the occupational activities listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities; damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent • Where environmental damage has not yet occurred but there is an imminent threat of such damage occurring, the operator shall, without delay, take the necessary preventive measures • Where environmental damage has occurred the operator shall, without delay, inform the competent authority of all relevant aspects of the situation and take all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and the necessary remedial measures, in accordance with Article 7. • The operator shall bear the costs for the preventive and remedial actions taken pursuant to this Directive • The competent authority shall be entitled to initiate cost recovery proceedings against the operator • The operator may be required to provide financial security guarantees to ensure their responsibilities under the directive are met 	The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations
SEA Directive (2001/42/EC)	<ul style="list-style-type: none"> • Contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development • Provide for a high level of protection of the environment by carrying out an environmental assessment of plans and programmes which are likely to have significant effects on the environment 	<ul style="list-style-type: none"> • Carry out an environmental assessment for plans or programmes referred to in Articles 2 to 4 • Prepare an environmental report which identifies, describes and evaluates the likely significant effects on the environment of implementing the plan or programme and reasonable alternatives that consider the objectives and the geographical scope of the plan or programme • Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission • Consult other Member States where the implementation of a plan or programme is likely to have transboundary environmental effects • Inform relevant authorities and stakeholders on the decision to implement the plan or programme • Issue a statement to include requirements detailed in Article 9 of the 	The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations

		<p>Directive</p> <ul style="list-style-type: none"> • Monitor and mitigate significant environmental effects identified by the assessment 	
<p>EIA Directive (2011/92/EU as amended by 2014/52/EU)</p>	<ul style="list-style-type: none"> • Requires the assessment of the environmental effects of public and private projects which are likely to have significant effects on the environment • Aims to assess and implement avoidance or mitigation measures to eliminate environmental effects, before consent is given of projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects. Those projects are defined in Article 4 	<ul style="list-style-type: none"> • All projects listed in Annex I are considered as having significant effects on the environment and require an EIA • For projects listed in Annex II, a "screening procedure" is required to determine the effects of projects on the basis of thresholds/criteria or a case by case examination. This should take into account Annex III. • The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12, the direct and indirect effects of a project on the following factors: human beings, fauna and flora, soil, water, air, climate and the landscape, material assets and the cultural heritage, the interaction between each factor • Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission before a decision is made • The information to be provided by the developer in accordance with paragraph 1 shall include at least: <ul style="list-style-type: none"> ○ a description of the project comprising information on the site, design and size of the project; ○ a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects; ○ the data required to identify and assess the main effects which the project is likely to have on the environment; ○ an outline of the main alternatives studied by the developer and an indication of the main reasons for his choice, taking into account the environmental effects; ○ a non-technical summary of the information referred to each of the above. 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations</p>
<p>EU Maritime Spatial Planning Directive (2014/89/EU)</p>	<ul style="list-style-type: none"> • This Directive establishes a framework for maritime spatial planning aimed at promoting the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources. 	<ul style="list-style-type: none"> • Each Member State shall establish and implement maritime spatial planning. • In doing so, Member States shall take into account land-sea interactions. • The resulting plan or plans shall be developed and produced in accordance with the institutional and governance levels determined by Member States. This Directive shall not interfere with Member States' competence to design and determine the format and content of that plan or those plans. • Maritime spatial planning shall aim to contribute to the objectives listed in Article 5 and fulfil the requirements laid down in Articles 6 and 8. • When establishing maritime spatial planning, Member States shall have due regard to the particularities of the marine regions, relevant existing and future activities and uses and their impacts on the environment, as well as to natural resources, and shall also take into account land-sea interactions. • Member States may include or build on existing national policies, regulations or mechanisms that have been or are being established before the entry into force of this Directive, provided they are in conformity with the requirements of this Directive. 	<p>Implementation of the Plan as varied is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations.</p>

National/Regional			
Plan/Programme	Highest Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevance to the Plan as varied
Infrastructure and Capital Investment 2012-16: Medium Term Exchequer Framework	<ul style="list-style-type: none"> Reviews infrastructure and capital spending over a medium timeframe to ensure investment is made in the best areas Identifies gaps in existing infrastructure that require addressing to aid economic recovery, social cohesion and environmental sustainability 	<p>The approach identifies four main components of the investment strategy as follows:</p> <ul style="list-style-type: none"> Economic infrastructure – encompassing transport networks, energy provision and telecommunications capacity Investment in the productive sector and human capital – such as direct supports for enterprise development; science, technology and innovation advancement; supports for tourism, agriculture, fisheries and forestry; and capital investment in education infrastructure Environmental infrastructure – including our waste and water systems and investment for environmental sustainability Critical social investment – such as the health service and social housing programmes 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Smarter Travel Initiative 2012-2016	<ul style="list-style-type: none"> Sustainable transport investment programme to encourage transport initiatives such as cycling, car sharing, the use of public transport etc. 	<ul style="list-style-type: none"> Certain towns were targeted demonstration areas for smarter transport initiatives and allocated funds to implement same 	In combination with this Initiative the Plan as varied will contribute towards smarter travel and associated positive environmental effects.
Smarter Travel – A Sustainable Transport Future – A New Transport Policy For Ireland 2009-2020 (2009)	<ul style="list-style-type: none"> Outlines a policy for how a sustainable travel and transport system can be achieved Sets out five key goals: <ul style="list-style-type: none"> To reduce overall travel demand. To maximise the efficiency of the transport network. To reduce reliance on fossil fuels. To reduce transport emissions. To improve accessibility to transport. 	<ul style="list-style-type: none"> Others lower level aims include: <ul style="list-style-type: none"> reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies strengthening institutional arrangements to deliver the targets 	In combination with this Policy the Plan as varied will contribute towards smarter travel and associated positive environmental effects.
Dublin to Galway Greenway Plan	<ul style="list-style-type: none"> Develop a segregated cycling and walking trail to international standards, extending from Dublin City to Galway which is of a scale that will allow Ireland to harness the potential of an identified growing tourism market for cycling. This route will form part of an interconnected National Cycle Network of high quality, substantially traffic free, inter urban routes, which will establish Ireland as a quality international tourism destination for a broad range of associated recreational activities and pursuits. 	<ul style="list-style-type: none"> To provide a segregated, substantially off road cycle route from Dublin City to Clifden via Galway City, maximising the use of - where feasible - existing and approved routes and disused railway line corridors and to also use existing plans and/or permitted projects where these have been subject to a consent process that has previously included the carrying out or screening for Strategic Environmental Assessment (SEA)/ Environmental Impact Assessment (EIA) and/or Appropriate Assessment (AA). The development of this route shall be subject to the requirements of Habitats and EIA Directives and shall comply with the provisions detailed in Appendix I 'Environmental Management and Sustainable Development' to this Plan. Where State lands are not available, land will be acquired in order to secure the use of the infrastructure for future years, thereby securing the State's investment. 	In combination with this Plan, the Plan as varied will contribute towards smarter travel and associated positive environmental effects
Ireland's First National Cycle Policy Framework (2009)	<ul style="list-style-type: none"> Outlines objectives and actions aimed at developing a strong cycle network in Ireland Sets out 19 specific objectives, and details the 109 actions, aimed at ensuring that a cycling culture is developed 	<ul style="list-style-type: none"> Sets a target where 10% of all journeys will be made by bike by 2020 Proposes the planning, infrastructure, communication, education and stakeholder participations measures required to implement the initiative 	In combination with this Framework the Plan as varied will contribute towards smarter travel and associated positive environmental effects

Scoping Study for a National Cycle Network (NCN)	<ul style="list-style-type: none"> Investigated the feasibility of developing a National Cycle Network for recreational routes in rural areas, urban areas and connecting larger urban areas The scoping study and subsequent workshops resulted in a recommended National Cycle Network 	not applicable	In combination with this Study the Plan as varied will contribute towards smarter travel and associated positive environmental effects.
Strategic Framework for Integrated Land use and Transport (SFILT) – Department of Transport, Tourism and Sport	<ul style="list-style-type: none"> Presents the findings and conclusions of a steering group which was convened and tasked with overseeing the preparation of an integrated, evidence-based framework that would guide key land transport investment decisions. 	<p>Key features of the framework policy include the following:</p> <ul style="list-style-type: none"> Focus on economic growth Principles to frame future investment 	In combination with this Study the Plan as varied will contribute towards smarter travel and associated positive environmental effects.
National Climate Change Strategy 2007 – 2012 (2007)	<ul style="list-style-type: none"> Outlines measures to be undertaken to meet the commitments under the Kyoto Protocol Identifies specific measures to meet the commitment up to 2012 and further measures to meet the 2020 target 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Climate Action and Low Carbon Development Act 2015	Ireland's national policy in response to climate change is determined, in part, by legislation.	<p>In particular, Ireland's first-ever dedicated climate change law, the Climate Action and Low Carbon Development Act 2015, provides for the making of:</p> <ul style="list-style-type: none"> five-yearly National Mitigation Plans to specify the policy measures to reduce greenhouse gas emissions a National Adaptation Framework to specify the national strategy for the application of adaptation measures in different sectors and by local authorities to reduce the vulnerability of the State to the negative effects of climate change. <p>The Act also establishes the Climate Change Advisory Council to advise ministers and the government on climate change matters.</p>	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Adaptation Framework 2018	The National Adaptation Framework sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation.	Under the Framework a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for.	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Mitigation Plan 2017	The first National Mitigation Plan 2017, prepared by the Department of Communications, Climate Action and Environment, represents an initial step to set Ireland on a pathway to achieve the level of decarbonisation required.	This is a whole-of-Government Plan, reflecting in particular the central roles of the key Ministers responsible for the sectors covered by the Plan – Electricity Generation, the Built Environment, Transport and Agriculture, as well as drawing on the perspectives and responsibilities of a range of other Government Departments.	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

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Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007 – 2020 (2007)	<ul style="list-style-type: none"> White paper setting out a framework for delivering a sustainable energy future in Ireland Outlines strategic Goals for: <ul style="list-style-type: none"> Security of Supply Sustainability of Energy Competitiveness of Energy Supply 	<p>The underpinning Strategic Goals are:</p> <ul style="list-style-type: none"> Ensuring that electricity supply consistently meets demand Ensuring the physical security and reliability of gas supplies to Ireland Enhancing the diversity of fuels used for power generation Delivering electricity and gas to homes and businesses over efficient, reliable and secure networks Creating a stable attractive environment for hydrocarbon exploration and production Being prepared for energy supply disruptions 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Renewable Energy Action Plan	<ul style="list-style-type: none"> A strategic approach for Ireland including measures to meet European targets for 2020 including Ireland's 16% target of gross final consumption to come from renewables by 2020 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Energy Efficiency Action Plan for Ireland 2007-2020 (2007)	<ul style="list-style-type: none"> This is the second National Energy Efficiency Action Plan for Ireland 	The Plan reviews the original 90 actions outlined in the first Plan and updates/renews/removes them as appropriate	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Sustainable Development – A Strategy for Ireland (1997)	<ul style="list-style-type: none"> Provides an analysis and a strategic framework for sustainable development in Ireland Identifies the approaches required to support sustainable development 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Wildlife Act of 1976 Wildlife (Amendment) Act, 2000	<ul style="list-style-type: none"> The act provides protection and conservation of wild flora and fauna 	<ul style="list-style-type: none"> Provides protection for certain species, their habitats and important ecosystems Give statutory protection to NHAs Enhances wildlife species and their habitats Includes more species for protection 	The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation
Actions for Biodiversity 2011-2016 Ireland's National Biodiversity Plan, 2011 (Draft National Biodiversity Action Plan 2017 - 2021)	<ul style="list-style-type: none"> Sets out strategic objectives, targets and actions to conserve and restore Ireland's biodiversity and to prevent and reduce the loss of biodiversity in Ireland and globally 	<ul style="list-style-type: none"> 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 ecosystem 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 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

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<p>The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)</p>	<ul style="list-style-type: none"> • Sets out comprehensive mechanisms for the incorporation of flood risk identification, assessment and management into the planning process • Ensures flood risk is a key consideration in preparing development plans and local area plans and in the assessment of planning applications • Implementation of the Guidelines is through actions at national, regional, local authority and site-specific levels 	<ul style="list-style-type: none"> • Avoid inappropriate development in areas at risk of flooding • Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off • Ensure effective management of residual risks for development permitted in floodplains • Avoid unnecessary restriction of national, regional or local economic and social growth • Improve the understanding of flood risk among relevant stakeholders • Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management. 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of these Guidelines</p>
<p>European Communities (Water Policy) Regulations of 2003 (SI 722 of 2003)</p> <p>European Communities (Water Policy) Regulations of 2003 (SI 350 of 2014)</p>	<ul style="list-style-type: none"> • Transposes the Water Framework Directive into legislation • Outlines the general duty of public authorities in relation to water • Identifies the competent authorities in charge of water policy (amended to Irish Water in 2013) and gives EPA and the CER the authority to regulate and supervise their actions 	<ul style="list-style-type: none"> • Implements River basin districts and characterisation of RBDs and River Basin Management Plans • Requires the public to be informed and consulted on the Plan and for progress reports to be published on RBDs • Implements a Register of protected areas, Classification systems and Monitoring programmes for water bodies • Allows the competent authority to recover the cost of damage/destruction of status of water body • Outlines environmental objectives and programme of measures and environmental quality standards for priority substances • Outlines criteria for assessment of groundwater 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>European Communities Environmental Objectives (Surface waters) Regulations of 2009 (SI 272 of 2009)</p>	<ul style="list-style-type: none"> • Transposes the requirements of the Water Framework Directive into Irish Legislation • The Surface Waters Regulations also give further effect to the WFD, establishing a framework for Community action in the field of water policy and Directive 2006/11/EC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community. 	<p>These Regulations provide, inter alia, for:</p> <ul style="list-style-type: none"> • The establishment of legally binding quality objectives for all surface waters and environmental quality standards for pollutants; • The examination and where appropriate, review of existing discharge authorisations by Public Authorities to ensure that the emission limits laid down in authorisations support compliance with the new water quality objectives/standards; • The classification of surface water bodies by the EPA for the purposes of the Water Framework Directive; • The establishment of inventories of priority substances by the EPA; and • The drawing up of pollution reduction plans by coordinating local authorities (in consultation with the EPA) to reduce pollution by priority substances and to cease and/or phase out discharges, emissions or losses of priority hazardous substances. 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>European Communities Environmental Objectives (Groundwater) Regulations of 2010 (SI 9 of 2010)</p>	<ul style="list-style-type: none"> • Transposes the requirements of the Groundwater Directive 2006/118/EC into Irish Legislation 	<ul style="list-style-type: none"> • Outlines environmental objectives to be achieved for groundwater bodies of groundwater against pollution and deterioration in quality • Sets groundwater quality standards • Outlines threshold values for the classification and protection of groundwater 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>
<p>Water Pollution Acts 1977 to 1990</p>	<ul style="list-style-type: none"> • The Water Pollution Acts allow Local Authorities the authority regulate and supervise actions relating to water in their division 	<p>The Water Pollution Acts enable local authorities to:</p> <ul style="list-style-type: none"> • prosecute for water pollution offences; • attach appropriate pollution control conditions in the licensing of effluent discharges from industry, etc., made to waters; • issue notices ("section 12 notices") to farmers, etc., specifying measures to be taken within a prescribed period to prevent water pollution; • issue notices requiring a person to cease the pollution of waters and 	<p>The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation</p>

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		<p>requiring the mitigation or remedying of any effects of the pollution in the manner and within the period specified in such notices;</p> <ul style="list-style-type: none"> • seek court orders, including High Court injunctions, to prevent, terminate, mitigate or remedy pollution/its effects; • prepare water quality management plans for any waters in or adjoining their functional areas 	
European Communities (Urban Waste Water Treatment) Regulations 2001 (S.I. No. 254/2001)	<ul style="list-style-type: none"> • Transposes the Urban Waste Water Treatment Directive into Irish Legislation • Aims to protect receiving waters from environmental damage arising from Urban Waste water 	<ul style="list-style-type: none"> • Sets out the legislative requirements for urban waste water collection and treatment systems • Provides for monitoring programmes of discharges • Specifies threshold values and minimum standards for water quality 	The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation
Water Services Act 2007 Water Services (Amendment) Act 2012 Water Services Act 2013	<ul style="list-style-type: none"> • Provides the water services infrastructure • Outlines the responsibilities involved in delivering and managing water services • Identifies the authority in charge of provision of water and waste water supply • Irish Water was given the responsibility of the provision of water and waste water services in the amendment act during 2013, therefore these services are no longer the responsibility of the 34 Local Authorities in Ireland 	<p>Key strategic objectives include:</p> <ul style="list-style-type: none"> • Ensuring Irish Water delivers infrastructural projects that meet key public health, environmental and economic objectives in the water services sector. • Ensuring the provision of adequate water and sewerage services in the gateways and hubs listed in the National Spatial Strategy, and in other locations where services need to be enhanced. • Ensuring good quality drinking water is available to all consumers of public and group water supplies, in compliance with national and EU drinking water standards • Ensuring the provision of the remaining infrastructure needed to provide secondary waste water treatment, for compliance with the requirements of the EU Urban Waste water Treatment Directive. • Promoting water conservation through Irish Water's Capital Investment Plan, the Rural Water Programme and other measures. • Monitoring the on-going implementation of septic tanks inspection regime and the National Inspection Plan for Domestic Waste Water Treatment Systems. • Ensuring a fair funding model to deliver water services. • Overseeing the establishment of an economic regulation function under the CER. 	The Council is obliged to comply with, as relevant and appropriate, the requirements of this legislation
Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2014-2016	<ul style="list-style-type: none"> • This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term. 	<p>Six strategic objectives as follows:</p> <ul style="list-style-type: none"> • Meet Customer Expectations. • Ensure a Safe and Reliable Water Supply. • Provide Effective Management of Waste water. • Protect and Enhance the Environment. • Support Social and Economic Growth. • Invest in Our Future. 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Ireland 2040 - Our Plan, the National Planning Framework	<ul style="list-style-type: none"> • The National Planning Framework is the Government's high-level strategic plan for shaping the future growth and development of to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for people, and to protect and enhance the environment - from villages to cities, and everything around and in between. 	<p>The National Planning Framework and accompanying National Development Plan share ten National Strategic Outcomes as follows:</p> <ol style="list-style-type: none"> 1. Compact Growth 2. Enhanced Regional Accessibility 3. Strengthened Rural Economies and Communities 4. Sustainable Mobility 5. A Strong Economy, supported by Enterprise, Innovation and Skills 6. High-Quality International Connectivity 7. Enhanced Amenity and Heritage 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

		8. Transition to a Low-Carbon and Climate-Resilient Society 9. Sustainable Management of Water and other Environmental Resources Access to Quality Childcare, Education and Health Services	
National Development Plan 2018-2027	<ul style="list-style-type: none"> The National Development Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework. This will guide national, regional and local planning and investment decisions in Ireland over the next two decades, to cater for an expected population increase of over 1 million people. 	The National Planning Framework and accompanying National Development Plan share ten National Strategic Outcomes as follows: <ol style="list-style-type: none"> Compact Growth Enhanced Regional Accessibility Strengthened Rural Economies and Communities Sustainable Mobility A Strong Economy, supported by Enterprise, Innovation and Skills High-Quality International Connectivity Enhanced Amenity and Heritage Transition to a Low-Carbon and Climate-Resilient Society Sustainable Management of Water and other Environmental Resources <ul style="list-style-type: none"> Access to Quality Childcare, Education and Health Services 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Grid25 Implementation Programme	<ul style="list-style-type: none"> Framework for the development of the electricity transmission grid in the short, medium and long terms, to support a long-term sustainable and reliable electricity supply 	<ul style="list-style-type: none"> Seeks to implement the provisions of the 2007 Government White Paper on Energy -“Delivering a Sustainable Energy Future for Ireland” in terms of development of electricity transmission infrastructure 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Water Resources Plan [in preparation]	<ul style="list-style-type: none"> The NWRP is a plan on how to provide a safe, secure and reliable water supply to customers for the next 25 years, without causing adverse impact on the environment. The objective of the NWRP is to set out how we intend to maintain the supply and demand for drinking water over the short, medium and long term whilst minimising the impact on the environment. 	The key objectives of the plan are to: <ul style="list-style-type: none"> Identify areas where there are current and future potential water supply shortfalls, taking into account normal and extreme weather conditions Assess the current and future water demand from homes, businesses, farms, and industry Consider the impacts of climate change on Ireland’s water resources Develop a drought plan advising measures to be taken before and during drought events Develop a plan detailing how we deal with the material that is produced as a result of treating drinking water Identify, develop and assess options to help meet potential shortfalls in water supplies Assess the water resources available at a national level including lakes, rivers and groundwater 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Landscape Strategy 2015	<ul style="list-style-type: none"> Aims to implement the European Landscape Convention in Ireland by providing for specific measures to promote the protection, management and planning of the landscape. 	The objectives of the National Landscape Strategy are to: <ul style="list-style-type: none"> Recognise landscapes in law Develop a National Landscape Character Assessment; Develop Landscape Policies; Increase Landscape Awareness; Identify Education, Research and Training Needs; and Strengthen Public Participation. 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Rural Development Programme	<ul style="list-style-type: none"> The National Rural Development Programme, prepared by the Department of Agriculture, Fisheries and Food, sets out a national programme based on the EU framework for rural development and prioritises improving the competitiveness of agriculture, improving the environment and improving 	At a more detailed level, the programme also: <ul style="list-style-type: none"> Supports structural change at farm level including training young farmers and encouraging early retirement, support for restructuring, development and innovation; Aims to improve the environment, biodiversity and the amenity 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework

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	the quality of life in rural areas	<p>value of the countryside by support for land management through funds such as Natura 2000 payments etc.; and</p> <ul style="list-style-type: none"> • Aims to improve quality of life in rural areas and encouraging diversification of economic activity through the implementation of local development strategies such as non-agricultural activities 	for environmental protection and management
Action Plan for Rural Development	<ul style="list-style-type: none"> • The aim of the Action Plan is to focus on the positive attributes of rural Ireland and unlock its potential through a framework of supports at national and local level. 	<p>The Action Plan includes a number of pillars as follow, under which various objectives are set out:</p> <ul style="list-style-type: none"> • Pillar 1: Supporting Sustainable Communities • Pillar 2: Supporting Enterprise and Employment • Pillar 3: Maximising our Rural Tourism and Recreation Potential • Pillar 4: Fostering Culture and Creativity in rural communities • Pillar 5: Improving Rural Infrastructure and Connectivity 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Forestry Programme 2014-2020	<ul style="list-style-type: none"> • Represents Ireland's proposals for 100% State aid funding for a new Forestry Programme for the period 2014 – 2020. 	<p>Measures include the following:</p> <ul style="list-style-type: none"> • Afforestation and Creation of Woodland • NeighbourWood Scheme • Forest Roads • Reconstitution Scheme • Woodland Improvement Scheme • Native Woodland Conservation Scheme • Knowledge Transfer and Information Actions • Producer Groups • Innovative Forest Technology • Forest Genetic Reproductive Material • Forest Management Plans 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Peatlands Strategy	<ul style="list-style-type: none"> • This Draft Strategy, prepared by the National Parks and Wildlife Service, will, when finalised, establish principles in relation to Irish peatlands in order to guide Government policy. The Draft Strategy aims to provide a framework for which all of the peatlands within the State can be managed responsibly in order to optimise their social, environmental and economic contribution. 	not applicable	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
National Hazardous Waste Management Plan (EPA) 2014-2020	<ul style="list-style-type: none"> • Sets out the priorities to be pursued over the next number of years to continually improve the management of Ireland's hazardous waste. 	<p>The objectives of the revised Plan are:</p> <ul style="list-style-type: none"> • To prevent and reduce the generation of hazardous waste by industry and society generally; • To maximise the collection of hazardous waste with a view to reducing the environmental and health impacts of any unregulated waste; • To strive for increased self-sufficiency in the management of hazardous waste and • to minimise hazardous waste export; • To minimise the environmental, health, social and economic impacts of hazardous waste generation and management 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Fáilte Ireland plans, strategies etc. including those relating to the Wild Atlantic Way, Ireland's Ancient East or other brands or initiatives	Fáilte Ireland's work includes preparing various plans and strategies for the Wild Atlantic Way, Ireland's Ancient East and other brands and initiatives. These plans are subject to their own environmental assessment processes and any project arising is required to be consistent with and conform with the provisions of all adopted/approved Statutory Policies, Strategies, Plans and Programmes, including provisions for the protection and	<p>Some of Fáilte Ireland's plans and strategies include various projects relating to land use and infrastructural development, including those relating to development of land or on land and the carrying out of land use activities. Many of these projects exist already while some are not currently in existence.</p> <p>The Statutory Policies, Strategies, Plans and Programmes that provide for different projects undergo a variety of environmental assessments. These</p>	Implementation of the Plan as varied is obliged to comply with, as relevant and appropriate, the requirements of the Directive and transposing regulations.

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	management of the environment.	assessments ensure that environmental effects are considered, including: those arising from new and intensified uses and activities; and those arising from various sectors such as tourism.	
National River Basin Management Plan	<ul style="list-style-type: none"> Provides a framework for the protection of water bodies in compliance with the Water Framework Directive Preserves, prevents the deterioration of water status and where necessary improves and maintains <i>good status</i> of water bodies in that RBD Promotes sustainable water usage 	<ul style="list-style-type: none"> Aims to protect and enhance all water bodies in the RBD and meet the environmental objectives outlined in Article 4 of the Water Framework Directive Identifies and manages water bodies in the RBD Establishes a programme of measures for monitoring and improving water quality in the RBD Involves the public through consultations 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Regional and Inter-County			
Plan/Programme	Highest Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevance to the Plan as varied
Regional Spatial Economic Strategy (Replacing Regional Planning Guidelines; To commence in 2018 and will be adopted over lifetime of the Plan)	<ul style="list-style-type: none"> Provide a long-term strategic planning framework for the development of regions The RPGs for the West Region 2010-2022 provide a framework for the long term strategic development of the West Region 	<ul style="list-style-type: none"> The Regional Spatial Economic Strategies will give regional effect to the National Planning Framework and guide the Development Plans and lower tier plans of planning authorities RPGs give regional effect to the National Spatial Strategy 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Freshwater Pearl Mussel Sub-Basin Management Plans	<ul style="list-style-type: none"> Identifies the current status of the species and the reason for loss or decline Identifies measure required to improve or restore current status 	<ul style="list-style-type: none"> Identifies pressures on Freshwater Pearl Mussels for each of the designated populations in Ireland Outlines restoration measures required to ensure favourable conservation status 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Management Plans for European Sites	Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for Special Area of Conservation involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans.	Integrated Management Plans can be practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations and with special regard to local communities.	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Outputs from the Western Catchment Flood Risk Assessment and Management (CFRAM) Programme	The national CFRAM programme commenced in Ireland in 2011 and is being overseen by the Office of Public Works. The CFRAM Programme is intended to deliver on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive. The Programme is being implemented through CFRAM Studies which are being undertaken for each of the six river basin districts in Ireland.	CFRAM Studies are being undertaken for all River Basin Districts. The studies are focusing on areas known to have experienced flooding in the past and areas that may be subject to flooding in the future either due to development pressures or climate change. Flood Maps have been published and Flood Risk Management Plans are currently being finalised having previously been subject to public consultations.	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Connacht-Ulster Regional Waste Management Plan	The plan provides the framework for waste management for a period of six years and sets out a range of policies and actions in order to meet specified mandatory and performance targets. The strategic vision of the regional waste plan is to rethink our approach to managing waste, by viewing our waste streams as valuable material resources, leading to a healthier environment and sustainable commercial opportunities for our economy.	Strategic objectives are detailed under the following headings: Policy & Legislation; Prevention; Resource Efficiency; Coordination; Infrastructure Planning; Enforcement & Regulations; Protection; and Other Wastes.	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management

County and Local			
Plan/Programme	Highest Level Aim/ Purpose/ Objective	Lower level relevant objectives , actions etc.	Relevance to the Plan as varied
County Development Plans including the Galway County Development Plan 2015-2021 (as varied)	<ul style="list-style-type: none"> • Outlines planning objectives for County/Town development over six year lifespan • Strategic framework for planning and sustainable development including those set out in National Spatial Strategy and Regional Planning Guidelines 	<ul style="list-style-type: none"> • Identifies future infrastructure, development and zoning required • Protects and enhances amenities and environment • Guides planning authority in assessing proposals 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Variation No. 2 (b) to the Galway County Development Plan 2015-2021	<ul style="list-style-type: none"> • Variation 2 (b) is to integrate a plan (including land use zoning) for sustainable development of the Gaeltacht (including the settlements of An Cheathrú Rua An Spidéal and Baile Chláir) into the County Development Plan. 	The Gaeltacht Plan further contributes towards the existing framework for the planned, co-ordinated and sustainable development of the Gaeltacht area, and for enhancement and facilitation of the balancing of economic, social and environmental infrastructure in order to maintain and develop a high quality of life, without compromising the protection of the environment and the needs of future generations	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management.
Local Area Plans (incl. those for Athenry, Clifden, Craughwell, Gort, Loughrea, Maigh Cuilinn, Oranmore, Oughterard, Portumna and Tuam)	<ul style="list-style-type: none"> • Statutory documents which provide detailed planning policies to ensure proper planning and sustainable development of area • Set out objectives for future planning and development 	<ul style="list-style-type: none"> • Identifies issues of relevance to the area and outlines principles for future development of area • Is consistent with relevant County/Town Development Plans, National Spatial Strategy and Regional Planning Guidelines 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Local Economic and Community Plan for County Galway	<ul style="list-style-type: none"> • The LECP is to set out, for a six-year period, the objectives and actions needed to promote and support the economic development and the local and community development of the local authority area, both by itself directly and in partnership with other economic and community development stakeholders. 	<ul style="list-style-type: none"> • The LECP and County Development Plan are closely linked. The LECP must be consistent with the Core Strategy of the County Plan. 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Groundwater Protection Scheme for County Galway	<ul style="list-style-type: none"> • Aims to preserve the quality of groundwater for drinking purposes and other beneficial uses, and for the benefit of present and future generations. 	<p>Objectives include:</p> <ul style="list-style-type: none"> • to assist the statutory authorities in meeting their responsibilities for the protection and conservation of groundwater resources; • to provide geological and hydrogeological information for the planning process, so that potentially polluting developments can be located and controlled in an environmentally acceptable way; 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management
Galway County Heritage & Biodiversity Plan 2017-2022	The aim of the Galway County Heritage & Biodiversity Plan 2017- 2022 is to place heritage and biodiversity at the heart of public life in the county through increasing awareness, participation, enjoyment, knowledge and understanding of our shared heritage to lead to its proper conservation, management and protection and safeguarding it for future generations.	<p>Three overarching objectives have been identified for the Heritage & Biodiversity Plan as follows:</p> <ol style="list-style-type: none"> 1. To increase awareness, appreciation and participation 2. To gather and share knowledge 3. To manage and conserve our heritage including biodiversity. 	To cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management