

# APPENDIX II: NON-TECHNICAL SUMMARY

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OF THE  
**ENVIRONMENTAL REPORT**  
OF THE  
**GALWAY COUNTY DEVELOPMENT PLAN  
2009-2015**

## STRATEGIC ENVIRONMENTAL ASSESSMENT



**for: Galway County Council**

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## Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report of the Galway County Development Plan (CDP) Strategic Environmental Assessment (SEA). The purpose of the report is to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in County Galway.

### **What is an SEA?**

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic and social considerations.

### **Why is it needed?**

The SEA is being carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management within County Galway. This report should be read in conjunction with the Development Plan.

### **How does it work?**

All of the main environmental issues in County Galway were assembled and presented to the team who are preparing the new plan. This helped them to devise a plan that protects whatever is sensitive in the environment. It also helped to identify wherever there are environmental problems in the County - so that these won't get any worse - and ideally the plan tries to improve these.

To decide how best to make a plan that protects the environment as much as possible the planners examined alternative versions of the plan. This helps to highlight the type of plans that are least likely to harm the environment.

### **What is included in the Environmental Report which accompanies the Plan?**

The Environmental Report contains the following information:

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Plan;
- An assessment of Plan policies and objectives; and,
- Mitigation measures which will aid compliance with important environmental protection legislation - e.g. the Water Framework Directive, the Habitats Directive - and which will avoid/reduce the environmental effects of implementing the Plan.

### **What happens at the end of the process?**

When the Draft Plan was adopted a document was prepared and made available to the public, referred to as the SEA Statement.

The SEA Statement includes information on how environmental considerations have been integrated into the Plan and why the preferred alternative was chosen for the Plan in light of the other alternatives - this introduces accountability, credibility and transparency into the Plan-making process.

## **Section 2 The Galway County Development Plan**

### **2.1 Structure and Content**

The CDP consists of:

- the main plan document;
- the Galway County Spatial Strategy;
- the Galway Housing Strategy; and,
- the Record of Protected Structures.

The main Plan document is divided into eleven chapters and sets out the aims and objectives for the County under the headings of: Spatial Strategy; Settlement Strategy; Economic Development and Tourism; Housing Provision; Roads and Transportation; Infrastructure and Services; Social Community and Cultural Heritage; and, Agriculture, Mariculture and Silviculture. The main Plan document also contains development management guidelines.

### **2.2 Overall Strategic Aims**

The overall strategic aims of the CDP are to:

- Implement an overall development strategy for the County aimed at achieving the balanced and sustainable development of County Galway in a strategic and plan led manner;
- Improve the quality of life for the people of Galway and maintain the County as a uniquely attractive place in which to live, work and visit;
- Create a receptive development environment in response to national and regional policy, such as the National Spatial Strategy, the National Development Plan 2007-2013 and the West Regional Planning Guidelines 2004-2016 (i.e. Counties Galway, Mayo, Roscommon and Galway City) (RPGs) and secure the development of the identified major infrastructural projects which will underpin sustainable development throughout the County and Region during the Plan period;
- Conserve the natural, built and cultural uniqueness of the County whilst accepting that this uniqueness has the potential to generate economic well being, enhanced quality of life and create vibrant communities;
- Drive forward the balanced economic and social development of Galway by facilitating new strategic developments at appropriate locations and enhancing the quality of life for the citizens of Galway within an environment of outstanding quality;
- Develop the Gaeltacht as an Irish speaking community, in line with Government policy, recognising its importance locally, nationally and internationally;
- Recognise the Galway Metropolitan Region as a location with the potential to attract investment both to the City and to the County, with mutually beneficial consequences, if managed and planned properly between the joint Authorities;
- Facilitate and encourage greater public involvement in the planning process; and,

- To move towards a more sustainable and integrated concept of development with regard to land use, transportation, water services, energy supply and waste management over the lifetime of the Plan.

## 2.3 Overall Spatial Strategy

The Plan proposes a structured approach to spatial planning and the settlement strategy founded on a well-developed urban structure supporting diverse rural areas. The strategy follows a strong yet flexible approach to development, placing emphasis on building critical mass in the Hub Town (Tuam) and at key towns and villages along the strategic development corridors emerging along the new transportation infrastructure (road and rail). The existing settlement strategy has been rationalised based on existing and proposed service infrastructure whilst providing a focus for the continued support of the rural areas. Rural populations will continue to be supported through the settlement centres and through a sustainable, flexible approach to maintaining rural economy and population, balanced against responsible environmental protection.

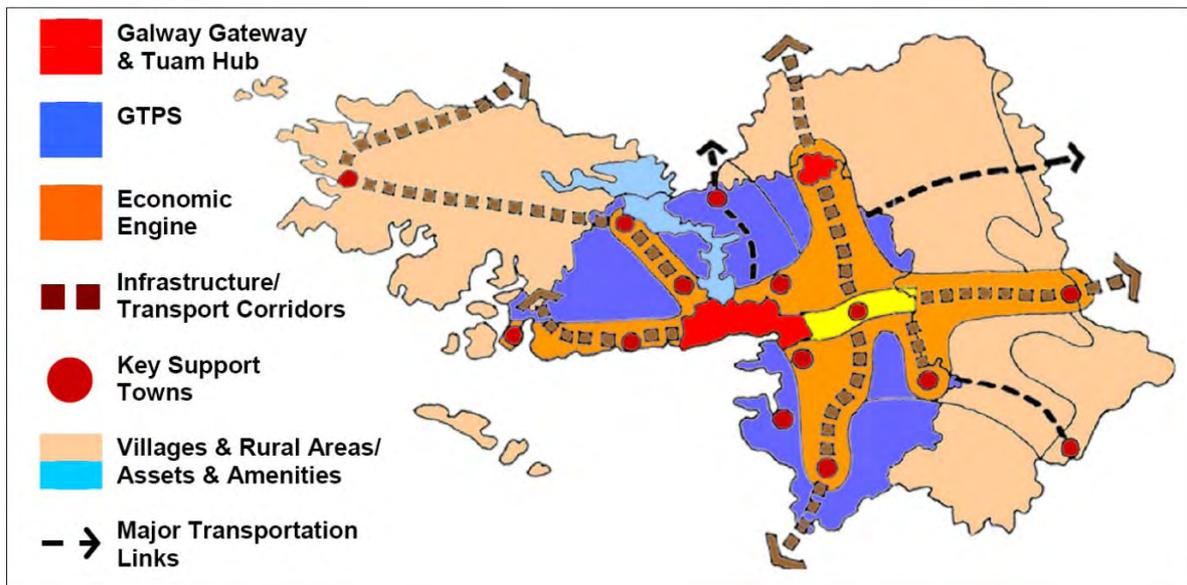


Figure 2.1 Illustrative depiction of the spatial planning and settlement strategy for the County from the County Development Plan

## Section 3 Existing Environment

### 3.1 Introduction

The environmental baseline of County Galway is described in this section. This baseline is used in order to identify, describe and evaluate the likely effects of implementing the County Development Plan and it includes sections on the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape.

County Galway is the second largest county in Ireland with an area of 6,148 square kilometres and a population of 231,035 persons as of Census 2006<sup>1</sup>, 159,052 of which live in the administrative area of Galway County Council and 71,983 of which live in Galway City. Located in the west of Ireland, the County shares borders with five other counties - Mayo, Roscommon, Offaly, Tipperary and Clare -, bordering the Atlantic Ocean to its east with a coastline of around 689 kilometres, excluding that of its many off shore islands. Human interaction with the land and sea is evident from the earliest of times up to the present, from archaeological remains to farmland to growing urban centres such as Galway City, Athenry, Ballinasloe, Clifden, Gort, Headford, Loughrea, Oranmore, Oughterard, Portumna and Tuam.

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<sup>1</sup> CSO (2007) *Census 2006 Volume 1 - Population Classified by Area* Cork: CSO

## 3.2 Biodiversity and Flora and Fauna

### 3.2.1 Overview

County Galway contains a variety of natural habitats including many of international nature importance such as blanket bogs, fens, heath, ancient oak woodland, turloughs, species-rich calcareous grassland and limestone pavement. The County also contains a large number of rare, threatened and uncommon species, including a large number of plants and animals that are protected under national and European Union legislation.

Land-cover within the County<sup>2</sup> is shown on the map overleaf. This mapping shows an overall difference between land cover to the west of Lough Corrib and land cover to the east of the Lough.

The western half of the County is primarily covered by the *peat bogs* category of land cover whereas the eastern half of the County is primarily covered by *pastures* as well as significant portions of *peat bogs* and *complex cultivation patterns*. *Water bodies* are spread across the western half of the County as pockets of *transitional woodland scrub* and *coniferous forest*. *Agricultural lands with natural vegetation* are found near the banks of the Corrib system and other lakes as well as being spread across the north of the County - to the south of Headford and to the north west of Tuam - and across the south west corner of the County. A mosaic of *peat bogs*, *transitional woodland scrub* and *coniferous forests* is found over a wide area located between Gort and Portumna, in the vicinity of the Slieve Aughty Mountains.

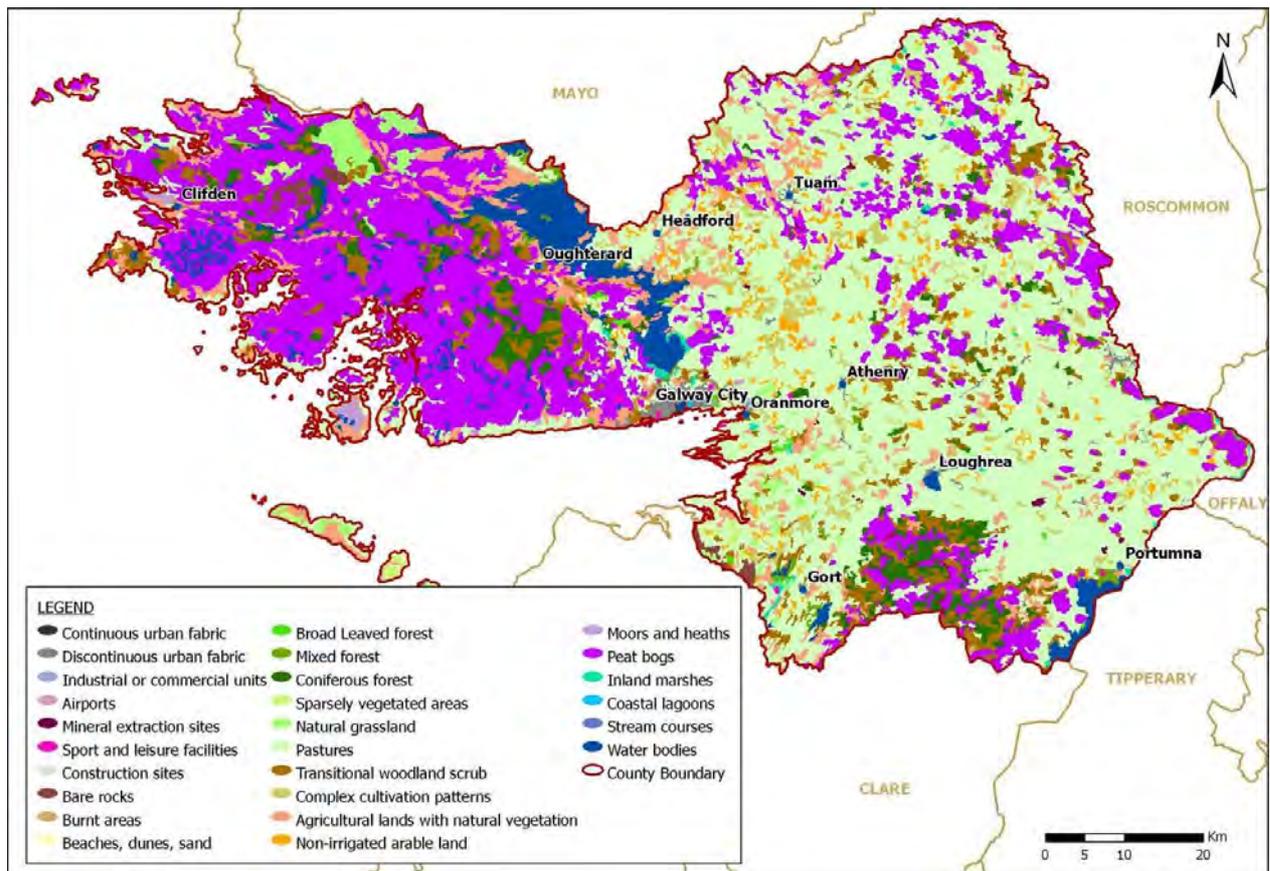


Figure 3.1 Land Cover Map

<sup>2</sup> European Environment Agency Coordination of Information on the Environment (2004) *Ireland's Corine Land Cover 2000 (CLC2000)* Copenhagen: EEA

### 3.2.2 Designations

The international significance of Galway's natural heritage is reflected in the fact that a high proportion of the county is designated for nature conservation under European and National legislation.

The majority of the western half of the County - including Lough Corrib, inner Galway Bay and most of the County's islands - is covered by designated sites while the eastern half of the County is covered to a significantly lesser extent by such designations; nevertheless a number of important areas are located in this half of the County.

Designated sites in the County include candidate Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas. These sites provide examples of bogs, callows, machair, limestone pavement, headlands, bays, loughs, turloughs, islands, woods and caves, bays, loughs, islands, marshes and eskers.

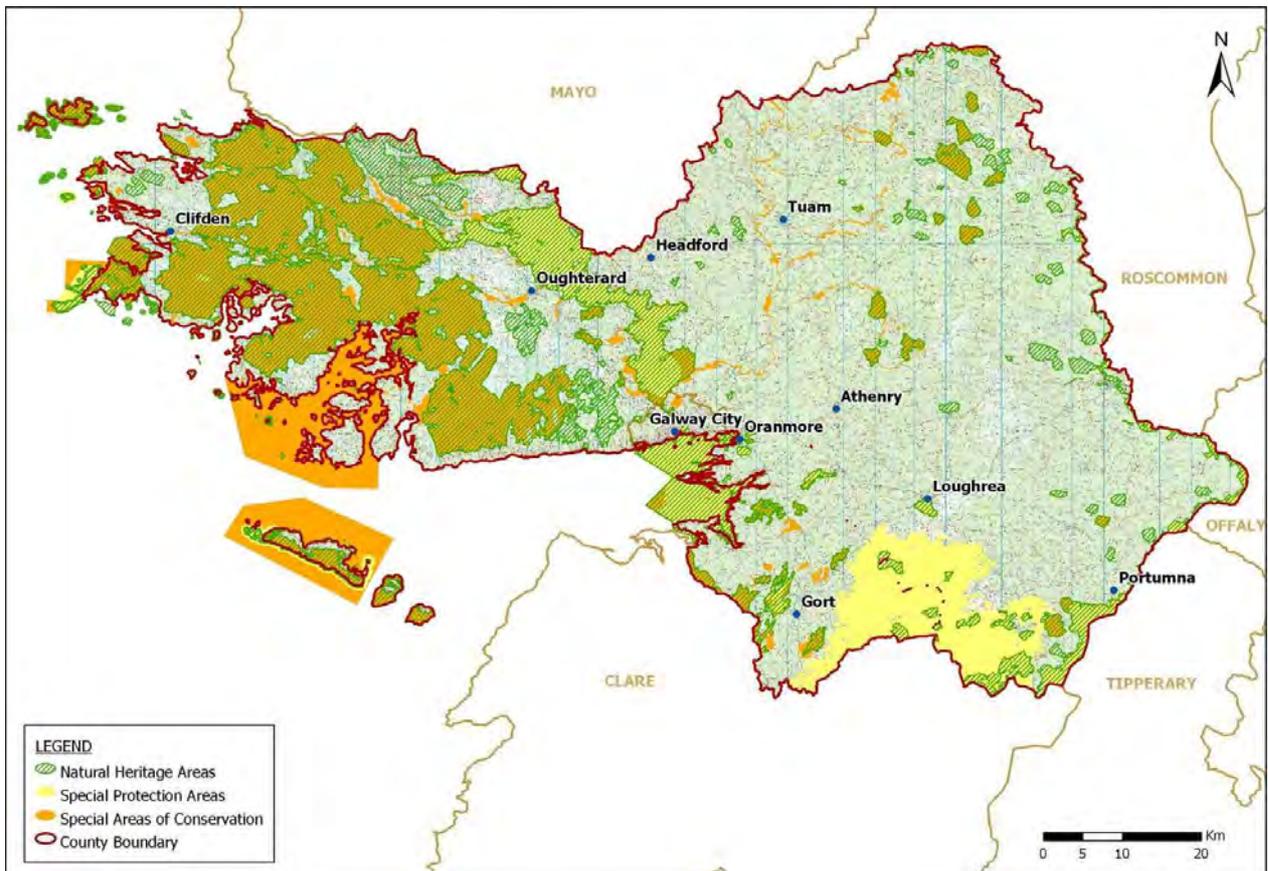


Figure 3.2 Designations

### 3.2.3 Important Issues to Consider

Compliance with the objectives of the Habitats Directive will be a challenge in all areas but especially in coastal areas and along the banks of Lough Corrib as most of the pressure upon designated habitats as a result of development is likely to occur these areas.

## 3.3 Population and Human Health

### 3.3.1 Human Health

With regard to human health, impacts relevant to the SEA are those which arise as a result of interactions with environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings).

Human health has the potential to be impacted upon by environmental vectors including water, soil and air. Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent landuses.

There existing problems relating to drinking water treatment in, among other water supplies, 35 public water supplies in the County. 10 of these water supplies are identified by the EPA as having inadequate treatment for cryptosporidium and a further 5 Water Supplies are included on the list due to a failure to meet the E.coli standard. Water which is not clean and wholesome would be likely to result in significant adverse impacts upon human health.

Two seawater bathing areas in the County - Clifden and Na Forbacha - exceeded EU mandatory values different types of coliforms. These values are set to protect human health and exceedences of them could lead to adverse impacts upon human health.

### 3.3.2 Population

The population of the county (all the areas outside of Galway City) was estimated at 159,052 during 2006. This is an increase of 11% on the 2002 Census figure of 143,245. In the same 2002 to 2006 period Galway City experienced a 9.3% increase in population, from 209,077 persons in 2002 to 231,035 persons in 2006. Galway County is predominantly rural with only around 15% of the population living in towns of more than 1,500 people. The largest towns located in east Galway - namely Ballinasloe, Tuam, Athenry, Gort - followed by Clifden in Connemara, west Galway.

### 3.3.3 Important Issues to Consider

Certain environmental vectors within the County's area - such as air, water or soil - have the potential to transport and deposit contaminants or pollutants, which have the potential to cause harm and adversely impact upon the health of the County's population. The most important of these issues relate to drinking water quality and bathing water quality as expanded upon above.

## 3.4 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 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. Soil types in County Galway are mapped on Figure 3.3<sup>3</sup>.

The area of the County to the west of Lough Corrib is generally covered by blanket bog with upland areas in Connemara and areas close to the coast covered by acid mineral soils.

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<sup>3</sup> Teagasc, GSI, Forest Service & EPA (2006) *Soils and Subsoils Class* Dublin: DEHLG

The area of the County to the east of Lough Corrib is generally covered with a mix of basic mineral soils and cutaway raised bog, with the latter increasing in occurrence in the north and west of the County. Grey brown podzolic basic mineral soils are deep, well drained soils which are derived from calcareous drift composed mainly of limestone with some coal shales and sandstone. These soils are relatively fertile, support grasslands and are facilitate the production of a wide range of vegetable crops. The Slieve Aughty foothills are covered by acid mineral soils while the Slieve Aughty uplands are by blanket bog. The County's river floodplains are covered with fertile alluvium.

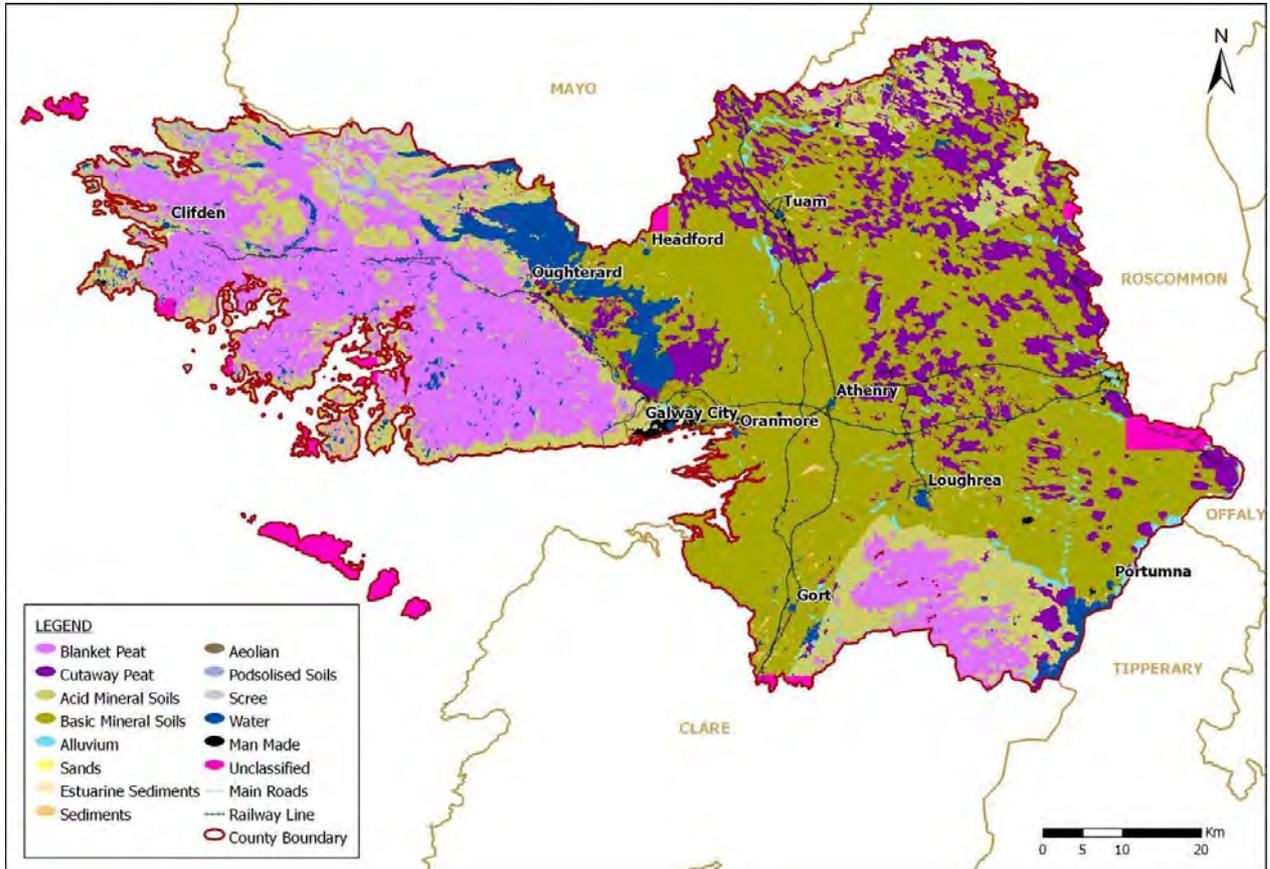


Figure 3.3 Soils

### 3.4.1 Important Issues to Consider

The most extensive habitat of nature importance within county Galway is lowland blanket bog, found mainly in south Connemara. This and other areas of bog within the County are internationally important - supporting a large variety of rare flora and fauna - and large areas are protected by a number of ecological designations identified on Figure 3.2. Loss of quality rare bog habitats has resulted in the decline in numbers of vulnerable birds which live and breed on the bogs.

Extensive areas of limestone pavement occur to the south of Kinvarra with a number of small, isolated patches occurring along a corridor from Kilcolgan to Tuam and near Moycullen. These areas of limestone pavement often occur in close association with species-rich calcareous grassland and sometimes support the protected species.

In addition to being a valuable ecological resource, Galway's soils provide employment within the County through areas such as agriculture, forestry, harvesting of peat and tourism. Greenfield development involves the building upon and thereby sealing off of non-renewable subsoil as well as topsoil. Such sealing can prevent soils from performing certain functions such as drainage.

## 3.5 Water and Waste Water

### 3.5.1 Introduction

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

- sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants;
- discharges arising from diffuse or dispersed activities on land;
- abstractions from waters; and,
- structural alterations to water bodies.

### 3.5.2 The Water Framework Directive

The Water Framework Directive (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 by 2015. All public bodies, including Galway County Council, 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 by 2015.

For the purpose of implementing the WFD, Ireland has been divided into eight river basin districts or areas of land that are drained by a large river or number of rivers and the adjacent estuarine/coastal areas. The west and centre of County Galway is located within the Western RBD while the east of the County is located within the Shannon RBD.

For the purposes of assessment, reporting and management, water in the RBDs has been divided into groundwater, rivers, lakes, estuarine waters and coastal waters which are in turn divided into specific, clearly defined water bodies. Each water body has been assessed, on the basis of human activity, whether it is *at risk* or *not at risk* of failing to achieve the WFD's objectives by 2015.

In order to facilitate this assessment, a four-class risk classification scheme was applied using the following terminology:

- Not at Significant Risk
- Probably Not at Significant Risk
- Probably at Significant Risk (these are likely to need improvement in order to achieve the required status)
- At Significant Risk (these will need improvement to achieve the required status)

In addition to the these assessments, the WFD requires that Registers of Protected Areas (RPAs) are compiled for a number 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.

Characterisation Reports were published by the Western and Shannon RBD Project Offices in 2005<sup>4</sup> including risk assessments for each waterbody in the RBDs as well as RPAs. River Basin Management Plans which will help protect and improve waters in the RBDs and provide specific policies for individual river basins in order to implement the requirements of the WFD are expected to be adopted in late 2009.

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<sup>4</sup> Western RBD Project Office (2005) *Article 5 Characterisation Summary Report* Galway: WRBD Project Office  
Shannon RBD Project Office (2005) *Article 5 Characterisation Summary Report* Annacotty: SRBD Project Office

### 3.5.3 Risk Assessments

#### 3.5.3.1 River Catchments

In terms of achieving the WFD's objectives by 2015, most river catchments are either classified as being *at significant risk* or *probably at significant risk* of meeting the objectives of the WFD by 2015 (see below). The east of the County has the greatest proportion of river catchments which are classified as either *at significant risk* or *probably at significant risk* of meeting the objectives of the WFD by 2015.

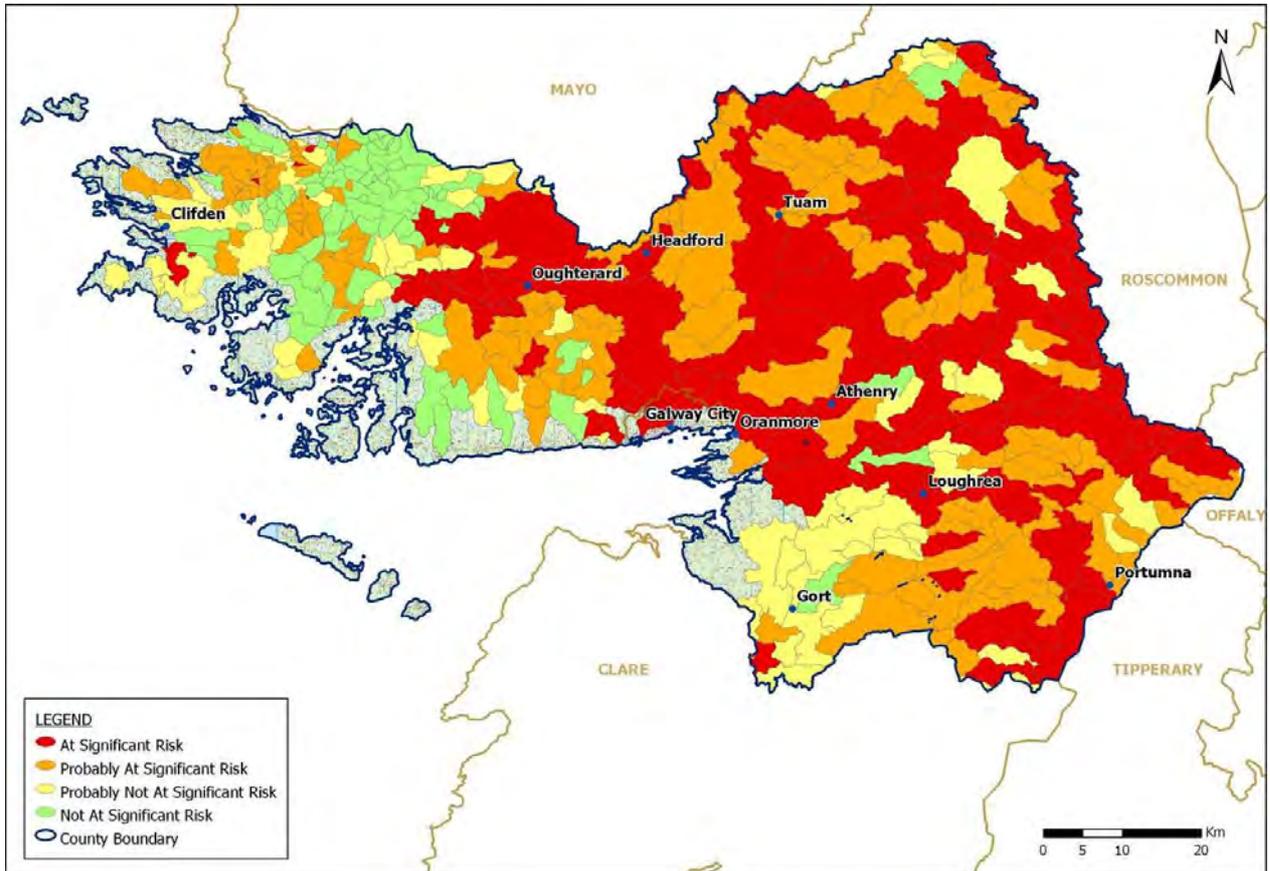


Figure 3.4 River Catchments Risk Assessment

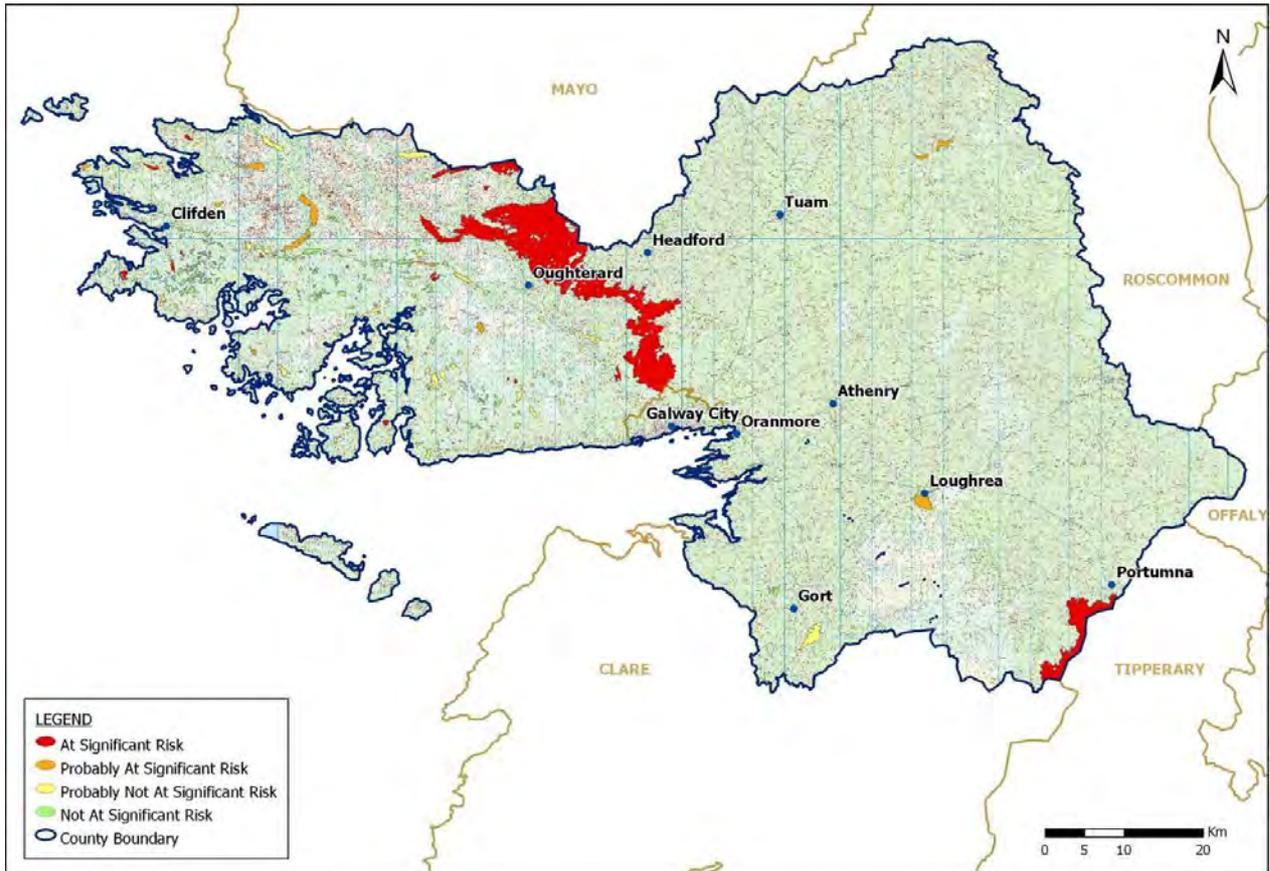
#### 3.5.3.2 Lakes

The majority of other lakes in the County occur to the west of Lough Corrib. Most of these lakes are classified as either *not at significant risk* or *probably not at significant risk* of meeting the objectives of the WFD by 2015. In the east of the County, Coolcam Lough, Glenamaddy Lough, Kiltullagh Lough, Rea Lough, Doo Lough, and Fiddaun Lough are all classified as *probably at significant risk* while Cutra Lough, Mannagh Lough, Nacarriga Lough and Coole Lough are all classified as either *not at significant risk* or *probably not at significant risk* of meeting the objectives of the WFD by 2015.

The largest lake in the County, Lough Corrib is classified as being *at significant risk* of meeting the objectives of the WFD by 2015 while Lough Derg, in the south east of the County, is also classified as being *at significant risk* (see map overleaf).

Factors contributing to these classifications include:

- o diffuse pressures as a result of inflowing waters;
- o morphological pressures due to impoundments; and,
- o point source pressures due to Section 4 (Local Authority licensed discharges) and waste water treatment plants.



**Figure 3.5 Lakes Risk Assessment**

### 3.5.3.3 Coastal Waters

Most of the coastal waters off County Galway - including the waters of many bays which do not have transitional waters - are classified as being *probably not at significant risk*.

Casla Bay is however classified as *at significant risk* of meeting the objectives of the WFD by 2015 (Reason: morphological pressures due to port tonnage) and Outer Galway Bay (Reason: morphological pressures due to built structures - urban/industrial shoreline) and Inner Galway Bay South (Reason: hazardous substances) are classified as *probably at significant risk*.

### 3.5.3.4 Transitional Water

Transitional waters are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows. These areas are important for the shell fish industry for which unpolluted water is essential.

In terms of achieving the WFD's objectives by 2015, Clifden Bay, Roundstone Bay and Kinvarra Bay are classified as being *probably at significant risk* while Camus Bay, the Corrib Estuary, Oranmore Bay and Dunbulcan Bay are classified as being *probably not at significant risk*. Point source pressures due to waste water treatment plants are the reason behind the *probably at significant risk* classification for Clifden, Roundstone and Kinvarra Bays.

### 3.5.3.5 Ground Waters

In terms of achieving the WFD's objectives by 2015, groundwater bodies underlying the western, north eastern and south eastern parts of the County are County Galway are classified as being either *not at significant risk* or *probably not at significant risk*.

Groundwater bodies underlying most of the other areas in the County - those areas in which most development exists and in which most new development is likely to occur - are classified as being *probably at significant risk*. The majority of these groundwaters have been classified as such due to diffuse pressures<sup>5</sup>.

Groundwater bodies underlying the islands of the County are classified as being *probably at significant risk* due to abstraction pressures with regard to groundwater balance and intrusion of saline water. Ground water balance can be adversely impacted upon when groundwater abstraction pressures exceed recharge to the groundwater body. Saline intrusion of groundwater bodies can occur in coastal areas when ground water is overabstracted. Saline intrusion can adversely impact upon groundwater quality and its use to humans. Galway's off-shore islands experience seasonal groundwater recharge due to varying rainfall and seasonal demand due to tourism.

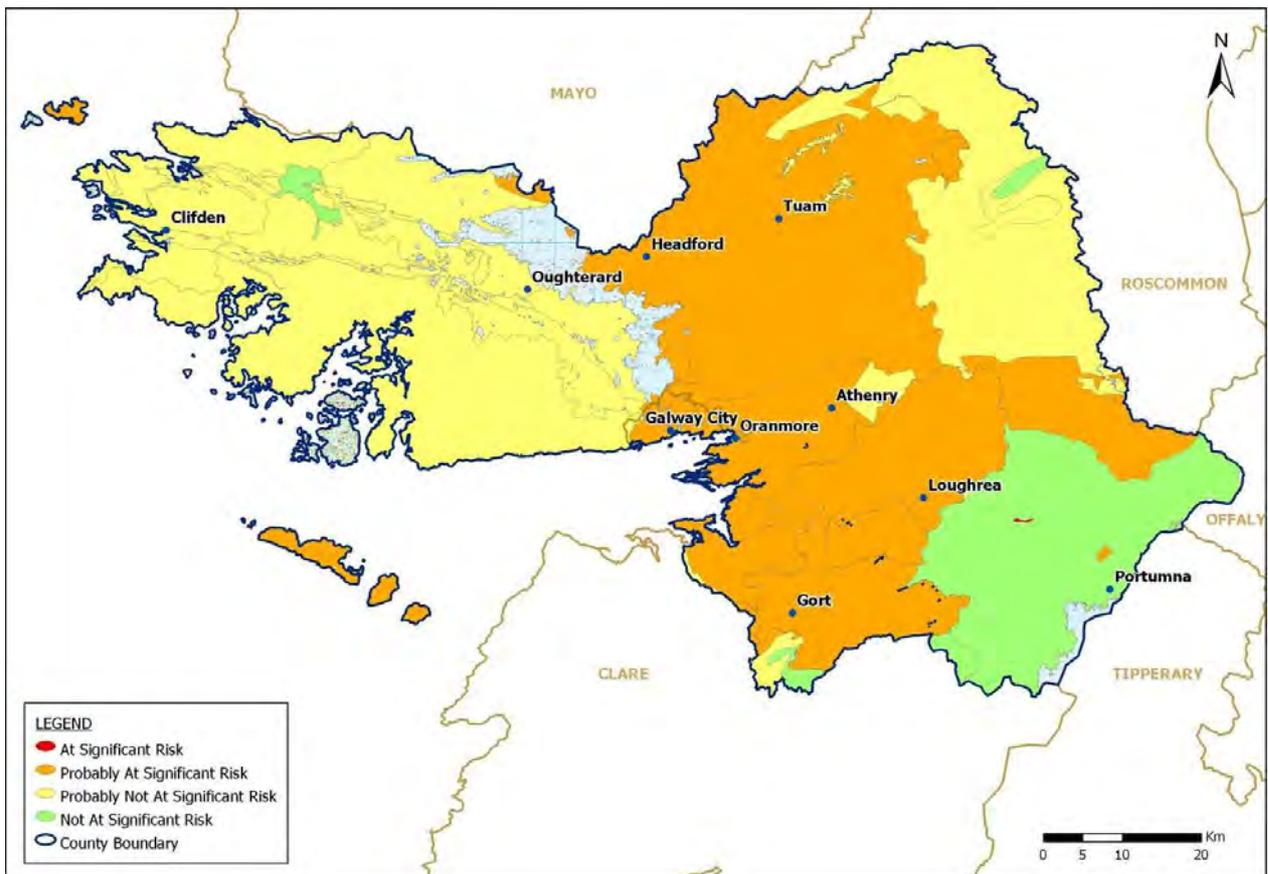


Figure 3.6 Groundwater Risk Assessment

### 3.5.3.6 Bathing Water

Two seawater bathing areas in the County - Clifden and Na Forbacha - exceeded EU mandatory values different types of coliforms. In relation to Clifden, the EPA identified that the existing wastewater treatment plant in Clifden is the most significant source of contamination of bathing waters and there is a permanent notice at Clifden beach informing the public that it is unsafe for bathing. A new waste water treatment plant with adequate capacity to treat foul drainage arising from the drainage network associated with the wastewater collection area in Clifden would be required if Clifden is to comply with the EU bathing water standards.

<sup>5</sup> The significant groundwater diffuse pressures addressed in the Irish risk assessment process are nutrients from: agricultural activities (including livestock farming, arable activities and intensive enterprises); unsewered human populations (septic tanks); and, usage of dangerous substances from all land use sectors including agrochemicals, urban and household products.

### 3.5.4 Flooding

Flooding is a long-established environmental phenomenon in County Galway that gives rise to significant economic and social effects. The magnitude and occurrence of these effects have been increased by development within the County's flood plains and may be increased in the future should changes in climate occur and should new development be located in flood plains. County Galway is vulnerable to adverse effects from changes in the occurrence of severe rainfall events and associated flooding of the County's rivers combined with small changes in sea level.

Seasonal flooding can be caused by turloughs, seasonal lakes that are a feature of the limestone lowlands of the County. The turloughs drain slowly via underground routes. This tends to cause a backing-up of water over the winter months, causing turloughs to expand. Extensive areas can become inundated if the accumulation of rainfall is greater than average over the autumn and winter months as was the case in the winter of 1994–1995 when severe flooding occurred in the Gort–Ardrahan area in the south of the County.

The water bodies within the County which are among those most at risk from flooding include the streams and rivers which drain the north of the County east of Lough Corrib into the Lough and those which drain the south east of the County - the catchments of the Cappagh, Kilcrow, Killadullisk and Killoran Rivers - into Lough Derg.

### 3.5.5 Waste Water

Having regard to the shallow soils, vulnerable aquifers and poor patterns on adequate installation and operation of effluent treatment systems in the County, surface and groundwaters in certain parts of the County have declined. This decline could have direct, indirect and cumulative effects on human health, economic development and on the resources necessary to sustain designated sites and species.

Details provided by Galway County Council and included in the environmental report on 22 waste water treatment plants show that 10 of these plants are currently overloaded and as a result are not compliant with the provisions of the Urban Waste Water Treatment Directive. All but one of the waste water treatment plants discharge to inland waters and all of the plants are located within the catchments of water bodies which have been classified as being either *(1a) at significant risk* or *(1b) probably at significant risk* with regard to meeting the objectives of the Water Framework Directive by 2015. Factors involved in this classification in each of these cases included: point source waste water treatment plant.

### 3.5.6 Important Issues to Consider

A number of the County's water bodies are at significant risk of failing to achieve the WFD's objectives of good status by 2015. The compliance of all water bodies within the County with the objectives of the Water Framework Directive will contribute to the protection of drinking water resources and consequently human health. Failure to comply could result in adverse impacts upon drinking water resources and consequently human health.

Two seawater bathing areas in the County - Clifden and Na Forbacha - exceeded EU mandatory values different types of coliforms.

The most productive aquifers in the County are those which are most vulnerable to pollution and are those over which most existing development occurs and most new development is likely to occur.

Overloading of waste water treatment plants, low levels of treatment provided in most plants, poor patterns of adequate installation and operation of effluent treatment systems and an overall inadequacy of infrastructure to collect, treat and dispose of effluents arising from development has the potential to have direct, indirect and cumulative effects on human health, economic development and on the resources necessary to sustain designated sites and species.

### 3.6 Air and Climatic Factors

An air quality monitoring site at Mace Head monitors concentrations of ground level Ozone (O<sub>3</sub>). The site's data identifies that ozone target values are currently being achieved. However the long term objectives for ozone are not currently being achieved - this is due to weather fluctuations and fluctuations of ozone being transported across the Atlantic Ocean, rather than local, county or national causes.

Although EPA air quality monitoring data apart from that generated at Mace Head does not exist for Galway County Council's area, it is likely that, given the rural nature of much of the County, that the Air Quality Standards Regulations 2002 are generally complied with and air quality is good relative to other European urban areas, despite the occurrence of traffic congestion and new development. It is noted however that *traffic hotspots* within some of the County's towns are likely to have elevated levels of air pollution and noise due to traffic congestion. Traffic hotspots are located along the main road routes - especially at intersections - and provide for a harsh sensory environment which may impact upon human health.

Localised air pollution incidences with regard to PM<sub>10</sub> and PM<sub>2.5</sub> and noise pollution are both likely to occur when demolition/construction takes place - especially in relation to PM<sub>10</sub> if suppression techniques are not introduced - and when traffic is queuing for long periods of time.

Ireland's current emissions are exceeding targets agreed in the peer review of Ireland's 2006 submission to the United Nations Framework Convention on Climate Change. It is unlikely that Ireland will meet these targets and it is likely therefore that financial penalties will be incurred. Transport related emissions continue to be the dominant growth sector.

Changes in sea level and/or changes in the occurrence of severe rainfall events as a result of climate change could adversely impact upon the County's human beings, its biodiversity and its economy, including its designated shellfish areas.

### 3.7 Cultural Heritage

Heritage, by definition, means inherited properties, inherited characteristics and anything transmitted by past ages and ancestors. It covers everything, from objects and buildings to the environment. Cultural heritage includes physical buildings, structures and objects, complete or in part, which have been left on the landscape by previous and indeed current generations.

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

Human interaction with the land and sea is evident from the earliest of times up to the present in County Galway, from agricultural landscapes to archaeological remains to growing urban centres.

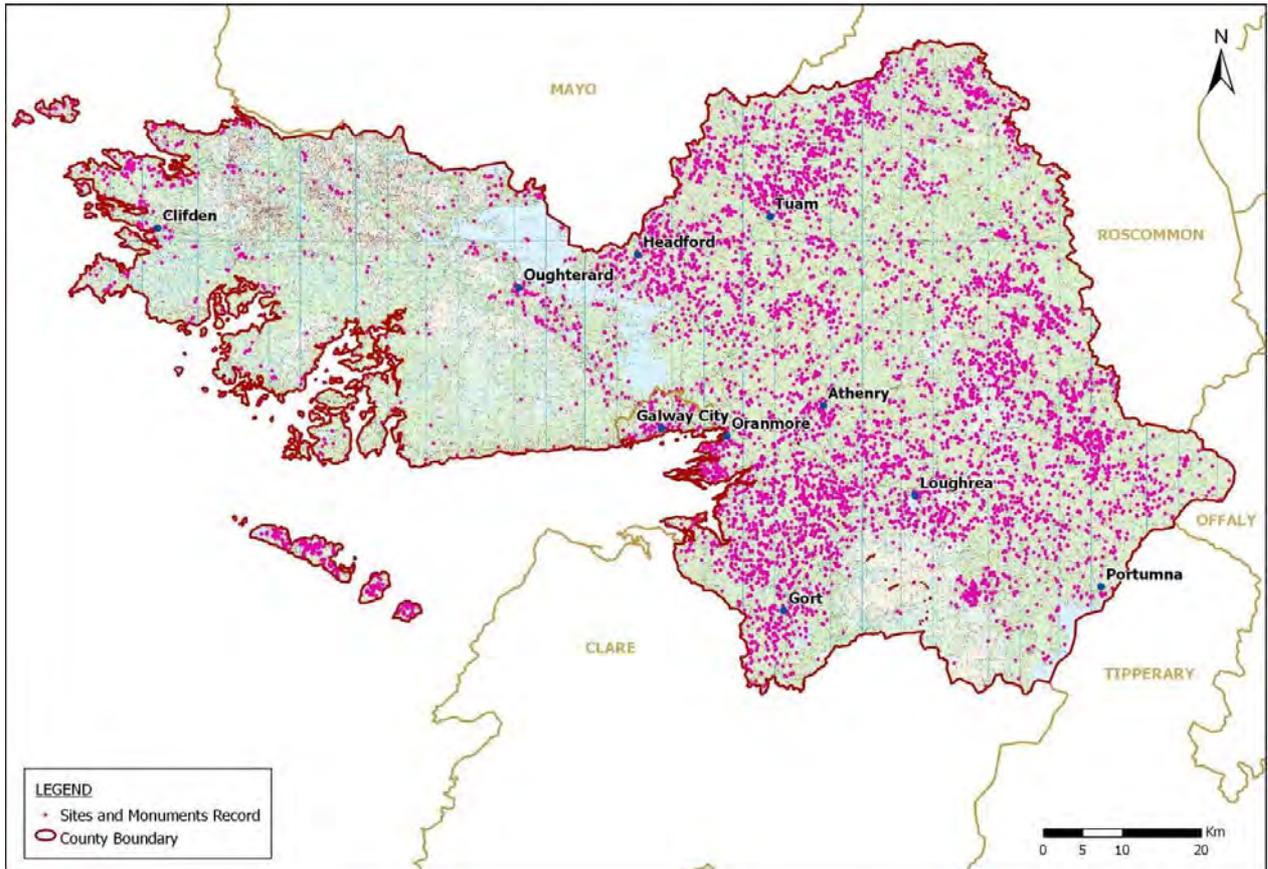
#### 3.7.1 Archaeological Heritage

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 such as wrecks.

The map below shows the spatial distribution of entries to the Record of Monuments and Places in County Galway.

The majority of the monuments are located to the east of Lough Corrib, in the eastern half of the County, along the coastline, along river and lake banks and within and surrounding settlements such as Galway City, Headford, Tuam, Oranmore, Athenry, Loughrea and Gort - showing that most people have always lived in the same parts of Galway as they do today.

In the western half of the County clusters of monuments are found near the banks of Lough Corrib, within and surrounding Oughterard and in coastal areas to the east of Connemara. A high proportion of monuments are to be found on the Aran Islands.



**Figure 3.7 Archaeological Heritage**

### 3.7.2 Architectural Heritage

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.

The physical form of the individual structures in the countryside and in the towns and villages of County Galway has evolved through many periods. The built heritage which has developed has attained a character that contributes to varied, locally distinctive areas in the County. County Galway's rich architectural heritage is reflected in the Record of Protected Structures for the County which currently lists 821 structures.

As is the case with archaeological monuments, the majority of Protected Structures are located to the east of Lough Corrib, in the eastern half of the County. Large clusters of the structures are found within the County's settlements while smaller clusters or individual structures are found in more rural areas. The majority of structures are located in areas where most of the County's existing development exists and where most new development is likely to occur.

In addition to these Protected Structures, there are nine Architectural Conservation Areas (ACAs) adopted in the current County Development Plan. These ACAs are found in the settlements of Oughterard, Headford, Tuam, Oranmore, Athenry, Clarinbridge, Loughrea, Gort, and Portumna. An ACA is a place, area or group of structures or townscape which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures, whose character it is an objective to preserve in a development plan. The ACA designation requires that planning permission must be obtained before significant works can be carried out to the exterior of a structure in the ACA which might alter the character of the structure or the ACA.

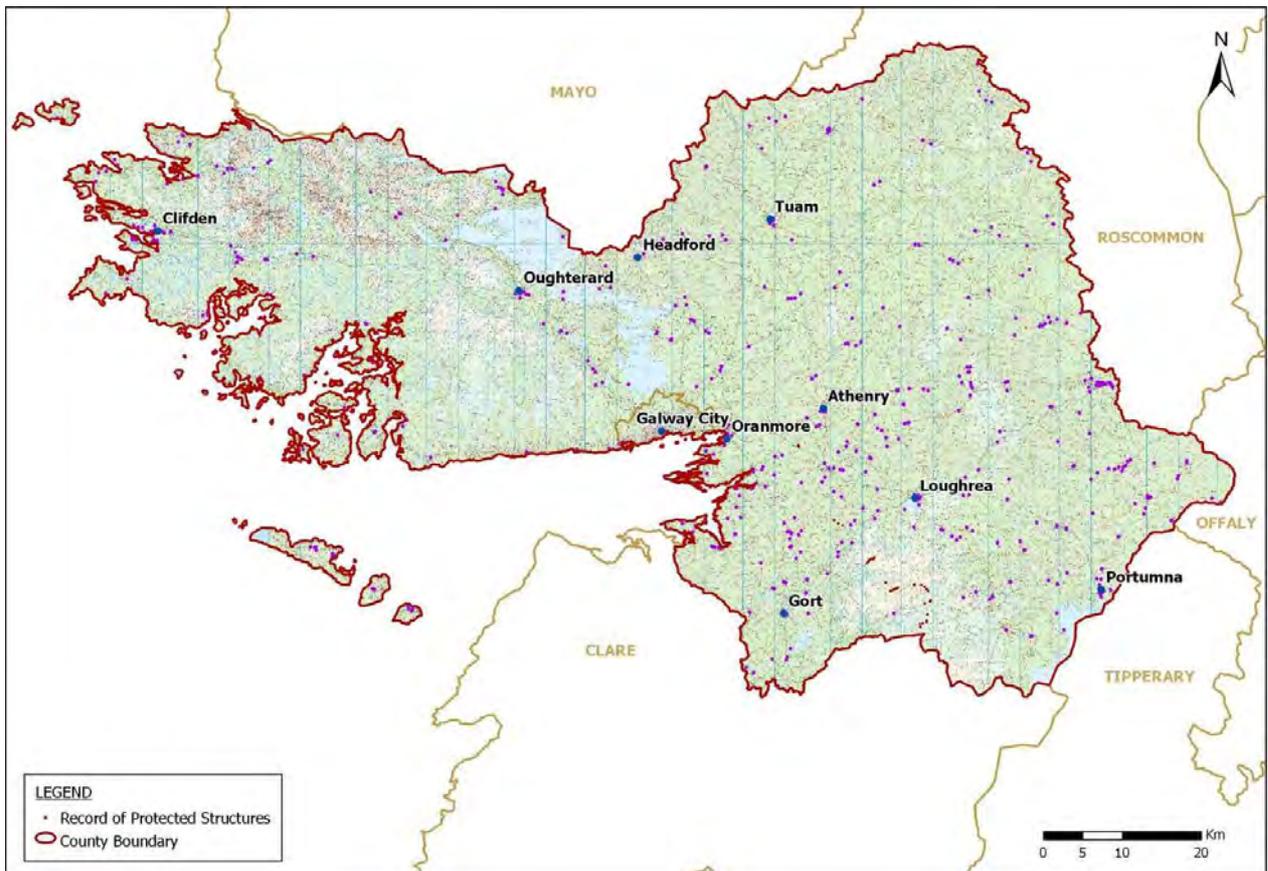


Figure 3.8 Architectural Heritage

### 3.8 Landscape

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.

Human interaction with the natural heritage has produced a variety of characteristic landscapes and landscape features. The natural diversity of the landscapes of the County coupled with cultural features such as the archaeological monuments, stonewalls, hedgerows, woodlands, field patterns, settlements and buildings has given the County its distinctive character.

County Galway is richly endowed with a variety of landscape types ranging from the quartzite mountain ranges and blanket bogs of Connemara to the fertile patchwork of farmland in east Galway and the bare karst pavements of the Aran Islands and South Galway.

West Galway is a rugged landscape with mountains, bogs, rivers and lakes. Galway is bounded to the west by an extensive and varied Atlantic coastline, which ranges from cliffs to sand dunes and rocky shores to salt marshes.

East Galway is characterised by a low-lying rolling topography of a fertile limestone plain, rich pasturelands, bog, and the Shannon system with its Callows and Lough Derg.

The County is dissected by many rivers and lakes with Lough Corrib, Ireland's second largest lake at its centre.

A multitude of dry stone walls typifies the landscape of the Aran Islands. Seascapes vary from the steep cliffs of the Aran Islands to sandy beaches and the famous Coral Strand, west of Carraroe, to the long fjord-like inlet of Killary harbour.

### **3.8.1 Important Issues to Consider**

The most valuable and sensitive landscapes in the County are found to the west of Lough Corrib - especially in the uplands of Connemara and in coastal areas.

Landscapes of lesser value and sensitivity - with the exception of areas including the coast of the County from Clarinbridge to Gort, the Lower Burren, water bodies and their banks and some upland areas in the Slieve Aughty Mountains - generally occur in the eastern half of the County.

As most new development is likely to occur in the eastern half of the County it will be possible to generally largely avoid the majority of the most sensitive landscapes in the County. However, housing development has the potential to threaten valuable and sensitive landscapes in coastal areas throughout the County; and, wind energy development in the west of the County potentially poses the greatest threat to valuable and sensitive landscapes in the west of the County, where wind energy potential is at its greatest.

## Section 4 Alternative Plan Scenarios

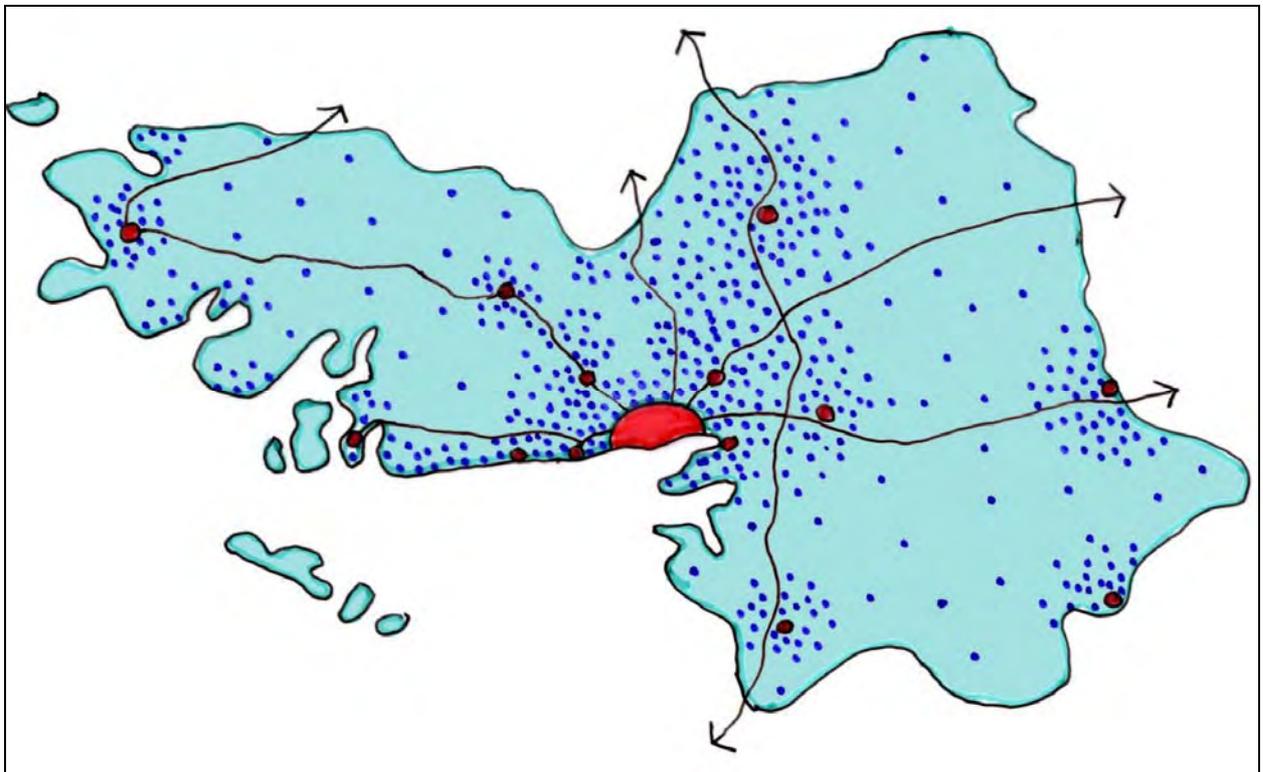
### 4.1 Introduction

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative strategies for accommodating future development in County Galway.

These alternative strategies must be realistic, capable of implementation, and should represent a range of different approaches within statutory and operational requirements of the particular plan. In some cases the preferred strategy will combine elements from the various alternatives considered.

This section identifies and describes different plan scenarios, taking into account higher level strategic actions as well as the geographical scope of the County.

### 4.2 Alternative Scenario 1: *Dispersed Development Strategy*



Alternative Scenario 1: *Dispersed Development Strategy* (Rural Dispersal with Limited Urban Growth) follows a *laissez-faire* approach to development.

The location and nature of development is completely dependent upon market demand and applications are evaluated on a case-by-case basis by the Council - with little consideration of planning or environmental protection - and favourable consideration is given to new development wherever it is applied for across the County. Development under this scenario is not required to adhere to the strategies that have been developed through current Local Area Plans which are amended to reflect the new County Development Plan.

The creation of critical mass in certain locations is not a consideration in this development strategy and no specific targets for or limitations on growth are set in the settlement strategy. The influence of Galway

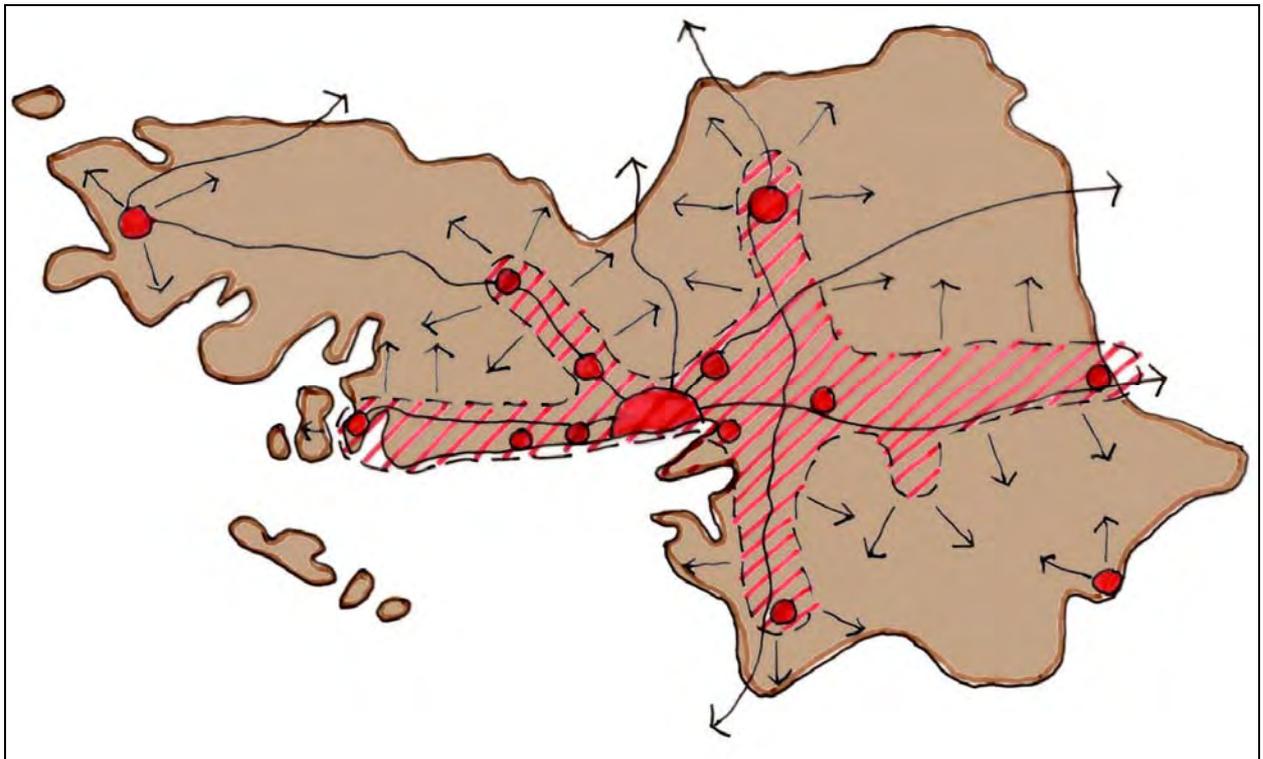
City and Tuam on growth within their commuter zones is strong and significant levels of suburbanisation develop along the roads in the vicinity of these settlements. Low density greenfield ribbon development emanates from existing settlements along the road corridors thereby expanding the footprints of settlements. Extensive areas of weakly controlled rural housing occur:

- throughout the eastern half of the County around the towns of Tuam, Ballinasloe, Claregalway, Athenry, Portumna and Gort;
- in coastal areas stretching from the outer reaches of Galway City westwards to Connemara and on to, and beyond, Clifden;
- in certain areas of inland Connemara; and,
- between Galway City and Oughterard, Oughterard and Maam and Maam and the environs of Cong adjacent to County Mayo.

Due to the highly dispersed nature of new settlement and the disproportionate occurrence of rural housing; villages and towns weaken. Limited brownfield development occurs in built up areas which are in need of regeneration. Instances of inappropriately scaled and designed development do occur however at certain locations within a number of the County's larger settlements.

In areas outside of the County's towns and villages, natural resource enterprises such as forestry, wind energy and mineral extraction are interspersed with large areas of rural housing. Wind energy development occurs in the western half of the County and in the Slieve Aughty Mountains. There is no strategy as to how to accommodate this development within these areas.

### 4.3 Description of Alternative Scenario 2: *Structured Development Strategy*



Alternative Scenario 2: *Structured Development Strategy* (Well Developed Urban Structure supporting Diverse Rural Areas) follows a strong yet flexible approach to development, placing emphasis on building critical mass in the Hub town (Tuam) and at key towns and villages along the strategic development corridors emerging along the new transportation infrastructure (road and rail). Existing settlement

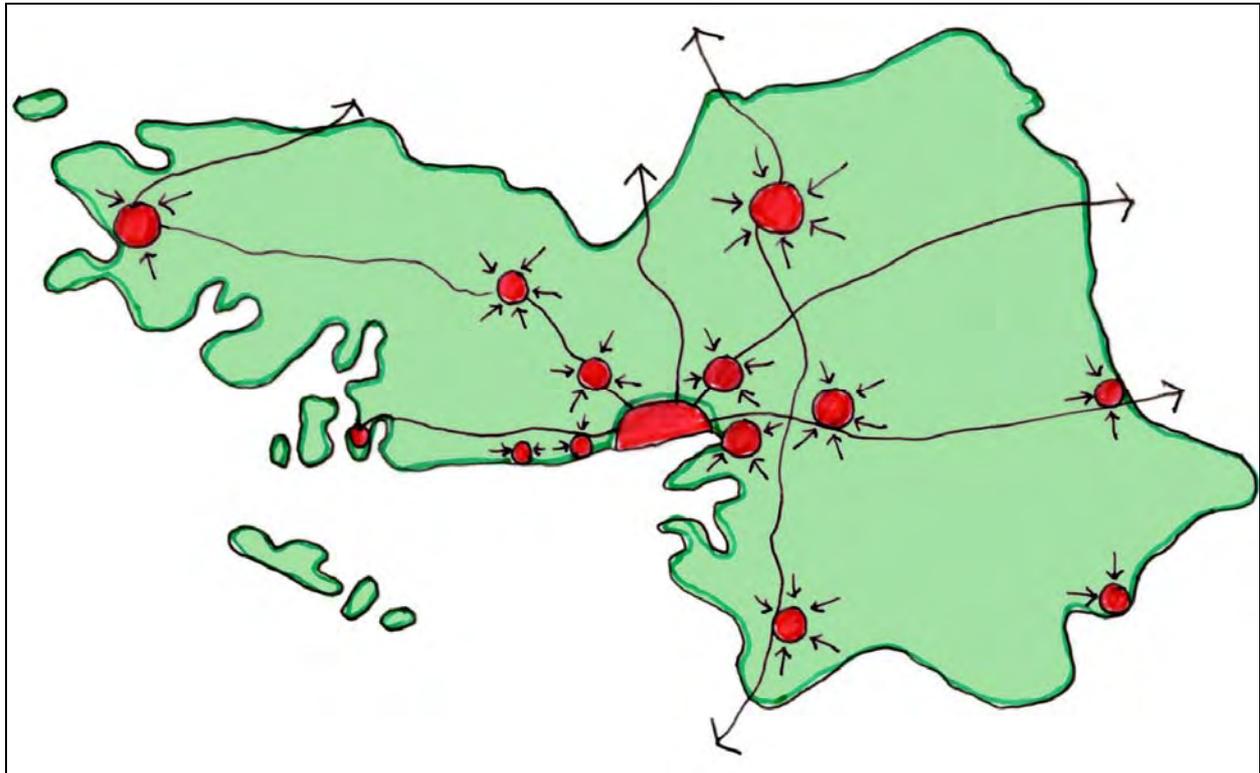
strategy to be rationalised based on existing and proposed service infrastructure whilst providing a focus for the continued support of the rural areas.

Rural populations to be supported through this settlement strategy and through a sustainable, flexible approach to maintaining rural economy and population, balanced against responsible environmental protection. Some areas of weakly controlled development in rural areas - especially along coasts with reasonable containment of development outside major towns.

Large areas of natural habitat remain in the West of the County interspersed with recreation and tourism enterprises adjoining extensive areas of natural resource enterprises such as forestry, wind energy and mineral extraction. The east-west central corridor of the County contains the majority of the settlement, infrastructure and enterprise.

Settlement is highly dispersed; villages and towns remain weak - except in tourism areas where they have poor social cohesion. Growth is distributed across the County, generally in line with the adopted Settlement Hierarchy, also having regard to the National Spatial Strategy (NSS).

#### 4.4 Description of Alternative Scenario 3: *Centred Development Strategy*



Alternative Scenario 3: *Centred Development Strategy* (Strong Urban Centres and Rural Protection) focuses on building strong urban centres and generating critical mass in the Galway Gateway, the Tuam Hub and a restricted number of towns to support enhanced infrastructure and services. These settlements would act as focal points for their rural catchments. Development outside of these centres would be strictly controlled to retain the character of existing rural areas and a strong environmental protection policy would be implemented. Growth is distributed across the County in line with the adopted Settlement Hierarchy, also having regard to the National Spatial Strategy (NSS) and the Regional Planning Guidelines. This scenario advocates and implements strong and robust environmental protection policies which are applied to various environmental zones within the County.

The majority of the Coast and the Connemara Highlands are managed and planned as natural amenities subject to strict interpretation of EU Directives - with the exception of areas designated for natural resource enterprises such as forestry, wind energy and mineral extraction. The east of the County supports rural enterprises - based on agri-business, and service functions set in a matrix of strengthening villages and towns as well as some rural settlement in planned areas.

Rural areas of the County sustain recreation and tourism enterprises as well as environmental services. Quality of life is the priority in strong towns and villages. A separate and distinctive coastal complex sustains a mixture of marine enterprises, tourism, settlement, and culture and service facilities in an overwhelmingly natural context. Rural Settlements would be planned in order to evolve into small mixed use urban centres, providing a range of services and employment to their local population.

## Section 5 Evaluation of Alternative Plan Scenarios

### 5.1 Evaluation of Alternative Scenario 1: *Dispersed Development Strategy*

#### 5.1.1 Planning Effects

The economic and social implications of this scenario would be significantly negative.

Protecting the County's natural environment and ensuring a degree of stability and certainty in established residential areas with regard to their future development makes for sound planning. However, to ensure that the County's current form and character determines the future shape and scope of the County would in the long run be to the detriment of the County's social, economic and environmental fabric overall.

#### 5.1.2 Environmental Effects

##### 5.1.2.1 Introduction

This Scenario will have different effects in different areas, which are considered on an area-by-area basis below. A number of general impacts will affect all areas under the following headings:

##### 5.1.2.2 General Effects

###### A. Water

Having regard to the shallow soils, vulnerable aquifers and poor patterns on adequate installation or operation of effluent treatment systems, it is likely that this scenario will lead to significant further declines in the status of surface and groundwaters because of the inadequacy of the infrastructure to collect, treat and dispose of effluents arising. This will have direct, indirect and cumulative effects on human health, economic development and on the resources necessary to sustain designated sites and species.

###### B. Ecology

Having regard to the significance, sensitivity, extent and integrity of existing designated habitats and species throughout the County - and in particular in the concentrations in the areas mentioned in Section 3.2.2 - it is likely that this scenario will give rise to many instances of direct, indirect and cumulative effects on designated sites, protected species and the resources necessary to sustain them.

However, it is extremely important to understand, and accept, that these habitats and their associated species are manifestations of a landscape that has been altered and managed by human beings for the majority<sup>6</sup> of their existence since the last Ice Age. Thus the continuation of human occupancy and use - facilitated by these developments - is a potentially significant positive factor in sustaining the management regime that gives rise to and sustains these designated sites.

###### C. Landscape

Having regard to the existence of extensive areas of landscapes that are highly valued at a national level as scenic and tourism resources and to the vulnerability of those resources - due to the open and largely unenclosed nature of the landscape - it is likely that this scenario will give rise to many instances of direct, indirect and cumulative effects on the appearance and character of vulnerable and valued landscapes.

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<sup>6</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

However, it is extremely important to understand, and accept, that these landscapes have been altered and managed by human beings for the majority<sup>7</sup> of their existence since the last Ice Age. Thus the continuation human occupancy and use - facilitated by these developments - is a potentially significant positive factor in sustaining the management regime that gives rise to and sustains these landscapes.

#### **D. Traffic and associated effects**

Having regard to the highly dispersed settlement pattern that results from this scenario there are likely to be commensurately high levels of movements of private cars and other transport. This will give rise to increased volumes of traffic with associated congestion and economic losses as well as direct emissions [air, noise and water runoff], energy uses and indirect effects due to the need for new or improved road capacity - resulting in impacts on ecology, landscape, cultural heritage and infrastructure.

#### **5.1.2.3 Area Effects**

##### **A. The Lough Corrib Catchment**

Having regard to the high concentrations of designations for scenery, ecology and the extreme vulnerability of surface and ground waters together with the absence of adequate infrastructure and the existing high levels of existing settlements, this area will experience significant additional levels of adverse environmental effects in addition to the existing environmental issues that already occur in this area.

##### **B. The Connemara Highlands**

Having regard to the high concentrations of designations for scenery, ecology together with the absence of adequate infrastructure, this area will experience additional levels of adverse environmental effects.

##### **C. The Coast**

Having regard to the high concentrations of designations for scenery, ecology and the vulnerability of waters together with the absence of adequate infrastructure and the existing high levels of existing settlements, this area will experience significant additional levels of adverse environmental effects in addition to the existing environmental issues that already occur in this area.

##### **D. East Galway**

Having regard to the deeper soils, less vulnerable aquifers, lower concentrations of ecological designations, lower scenic significance, lower concentration of dwelling and greater frequency of existing settlements with associated infrastructure - this area will experience relatively few additional adverse effects on environmental resources - other than those that already exist - with the possible exception of increased vulnerability to flooding in the extreme south-east of the County.

## **5.2 Evaluation of Alternative Scenario 2: *Structured Development Strategy***

### **5.2.1 Planning Effects**

The approach taken by Scenario 2 - is consistent with national planning policy and aims to maximise urban development on inner suburban and brownfield sites in order to minimise suburban sprawl. The more intensive urban development provided for by this scenario would enable the delivery of a critical mass of population to underpin new infrastructure and services; in particular, a high quality public transport service for the County.

With future population and economic growth targeted at these key areas, other areas - including existing residential areas - would experience development relative to their carrying capacity which would facilitate the protection of the character and amenity of these areas.

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<sup>7</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

By accommodating new populations through the redevelopment of strategic urban areas within the plan area, this approach would reduce the need to accommodate these populations by way of greenfield development and facilitate the development of sustainable communities where population and employment can be developed in union thereby reducing travel to work times and traffic congestion and encouraging sustainable living patterns. By helping to reduce pressure on greenfield land adverse environmental impacts across the region would be reduced.

This approach is a pragmatic mixture of a *Plan-led* and a *Market-led Approach* - which would allow for the market to dictate where some development takes place.

As the market will react to trends and changes in demand and profitability (e.g. whether it is for commercial or residential development) the nature and type of development delivered will depend on changeable economic circumstances.

This reduces the coherence of the spatial strategy and increases the difficulty of the delivery of infrastructure and sustainable transport systems and communities.

Some areas of the County will lack a coherency of form and character - thereby undermining the creation of sense of place and belonging for future populations - while more urban areas will improve.

## **5.2.2 Environmental Effects**

### **5.2.2.1 Introduction**

This Scenario will have different effects in different areas, which are considered on an area-by area basis below. A number of general impacts will affect all areas under the following headings:

#### **5.2.2.2 General Effects**

##### **A. Water**

Having regard to the shallow soils, vulnerable aquifers and poor patterns on adequate installation or operation of effluent treatment systems, it is likely that this scenario will help to reduce significant further declines in the status of surface and groundwaters. This is likely to occur because of the provision of additional infrastructure to collect, treat and dispose of effluents arising. This, in turn, will have localised direct, indirect and cumulative positive effects on human health, economic development and on the resources necessary to sustain designated sites and species. While this will help to reduce the effects of new developments, the environmental issues associated with existing developments are likely to persist beyond the current plan period.

##### **B. Ecology**

Having regard to the significance, sensitivity, extent and integrity of existing designated habitats and species throughout the County - and in particular in the concentrations in the areas mentioned in Section 5.2.2.3 - it is likely that this scenario will help to reduce direct, indirect and cumulative effects caused by new developments on designated sites, protected species and the resources necessary to sustain them. However the environmental issues associated with existing developments are likely to persist beyond the current plan period.

However, it is extremely important to understand, and accept, that these habitats and their associated species are manifestations of a landscape that has been altered and managed by human beings for the majority<sup>8</sup> of their existence since the last Ice Age. Thus the reduction of human occupancy and use - due to restrictive rural planning policies in some parts of the County - is a potentially negative factor in contributing to the reduction of the management regime that gives rise to and sustains these designated sites.

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<sup>8</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

### **C. Landscape**

Having regard to the existence of extensive areas of landscapes that are highly valued at a national level as scenic and tourism resources and to the vulnerability of those resources - due to the open and largely unenclosed nature of the landscape - it is likely that this scenario will reduce direct, indirect and cumulative effects on the appearance and character of vulnerable and valued landscapes. However the environmental issues associated with existing developments are likely to persist beyond the current plan period.

However, it is extremely important to understand, and accept, that these landscapes have been altered and managed by human beings for the majority<sup>9</sup> of their existence since the last Ice Age. Thus the reduction of continuation human occupancy and use - due to restrictive rural planning policies in parts of the County - is a potentially negative factor in contributing to the reduction of the management regime that gives rise to and sustains these landscapes.

### **D. Traffic and associated effects**

Having regard to the more concentrated settlement pattern that are likely to result from this scenario there are likely to be lower levels of movements of private cars and other transport. This will give rise to stable volumes of traffic with no increases in congestion and economic losses as well as direct reductions in emissions [air, noise and water runoff], energy uses and a reduction of indirect effects due to the need for new or improved road capacity – resulting in fewer impacts on ecology, landscape, cultural heritage and infrastructure.

#### **5.2.2.3 Area Effects**

##### **A. The Lough Corrib Catchment**

Having regard to the high concentrations of designations for scenery, ecology and the extreme vulnerability of surface and ground waters, localised potential for flooding together with the absence of adequate infrastructure and the existing high levels of existing settlements this area will experience stabilisation of adverse environmental effects as well as an no further declines of existing environmental conditions in this area.

##### **B. The Connemara Highlands**

Having regard to the high concentrations of designations for scenery and ecology together with the absence of adequate infrastructure, this area will experience no additional levels of adverse environmental effects.

##### **C. The Coast**

Having regard to the high concentrations of designations for scenery, ecology and the vulnerability of waters together with the absence of adequate infrastructure and the existing high levels of existing settlements, this area will experience stabilisation of adverse environmental effects because of improved environmental infrastructure that will be more economically feasible for areas with concentrated patterns of development.

##### **D. East Galway**

Having regard to the deeper soils, less vulnerable aquifers, lower concentrations of ecological designations, lower scenic significance, lower concentration of dwelling and greater frequency of existing settlements with associated infrastructure, this area will experience relatively few additional adverse effects on environmental resources - other than those that already exist and an increase vulnerability to flooding in the south-east of the County<sup>10</sup>.

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<sup>9</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

<sup>10</sup> The catchments of the Cappagh, Kilcrow, Killadullisk and Killoran Rivers

## 5.3 Evaluation of Alternative Scenario 3: *Centred Development Strategy*

### 5.3.1 Planning Effects

This *Plan-led Approach* - would allow for densities to be maximised and efficient use made of serviced land.

A more coherent spatial strategy for the distribution of population will facilitate the delivery of sustainable infrastructure, transport systems and communities.

Areas of the County will have improved coherency of form and character thereby bringing about the creation of sense of place and belonging for future populations.

### 5.3.2 Environmental Effects

#### 5.3.2.1 Evaluation

This Scenario will have different effects in different areas, which are considered on an area-by area basis below. A number of general impacts will affect all areas under the following headings:

#### 5.3.2.2 General Effects

##### A. Water

Having regard to the shallow soils, vulnerable aquifers and poor patterns on adequate installation or operation of effluent treatment systems, it is likely that this scenario will help to reduce or prevent significant further declines in the status of surface and groundwaters. This is likely to occur because of the provision of adequate of the infrastructure to collect, treat and dispose of effluents arising. This, in turn, will have direct, indirect and cumulative positive effects on human health, economic development and on the resources necessary to sustain designated sites and species.

##### B. Ecology

Having regard to the significance, sensitivity, extent and integrity of existing designated habitats and species throughout the County - and in particular in the concentrations in the areas mentioned in Section 5.3.2.3 - it is likely that this scenario will help to avoid or reduce direct, indirect and cumulative effects on designated sites, protected species and the resources necessary to sustain them.

However, it is extremely important to understand, and accept, that these habitats and their associated species are manifestations of a landscape that has been altered and managed by human beings for the majority<sup>11</sup> of their existence since the last Ice Age. Thus the discontinuation of human occupancy and use – due to restrictive rural planning policies – is a potentially significant negative factor in contributing to the cessation of the management regime that gives rise to and sustains these designated sites.

##### C. Landscape

Having regard to the existence of extensive areas of landscapes that are highly valued at a national level as scenic and tourism resources and to the vulnerability of those resources – due to the open and largely unenclosed nature of the landscape - it is likely that this scenario will avoid or reduce direct, indirect and cumulative effects on the appearance and character of vulnerable and valued landscapes.

However, it is extremely important to understand, and accept, that these landscapes have been altered and managed by human beings for the majority<sup>12</sup> of their existence since the last Ice Age. Thus the discontinuation of continuation human occupancy and use - due to restrictive rural planning policies - is a

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<sup>11</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

<sup>12</sup> Agriculture in Ireland is estimated to have been a significant environmental modifier for about six thousand years. Unmodified post-Glacial habitats existed for about four thousand years prior to that time.

potentially significant negative factor in contributing to the cessation of the management regime that gives rise to and sustains these landscapes.

#### **D. Traffic and associated effects**

Having regard to the concentrated settlement pattern that are likely to result from this scenario there are likely to be commensurately lower levels of movements of private cars and other transport. This will give rise to reduced volumes of traffic with associated reductions in congestion and economic losses as well as direct reductions in emissions [air, noise and water runoff], energy uses and avoidance or reduction of indirect effects due to the need for new or improved road capacity - resulting in fewer impacts on ecology, landscape, cultural heritage and infrastructure.

#### **5.3.2.3 Area Effects**

##### **A. The Lough Corrib Catchment**

Having regard to the high concentrations of designations for scenery, ecology and the extreme vulnerability of surface and ground waters, localised potential for flooding together with the absence of adequate infrastructure and the existing high levels of existing settlements, this area will experience an avoidance or reduction of adverse environmental effects as well as an improvement of existing environmental issues in this area.

##### **B. The Connemara Highlands**

Having regard to the high concentrations of designations for scenery and ecology together with the absence of adequate infrastructure, this area will experience no additional levels of adverse environmental effects.

##### **C. The Coast**

Having regard to the high concentrations of designations for scenery, ecology and the vulnerability of waters together with the absence of adequate infrastructure and the existing high levels of existing settlements, this area will experience significant improvements in environmental conditions because of improved environmental infrastructure that will be economically feasible for concentrated patterns of development.

##### **D. East Galway**

Having regard to the deeper soils, less vulnerable aquifers, lower concentrations of ecological designations, lower scenic significance, lower concentration of dwelling and greater frequency of existing settlements with associated infrastructure - this area will experience relatively few additional adverse effects on environmental resources - other than those that already exist and an increase vulnerability to flooding in the south-east of the County<sup>13</sup>.

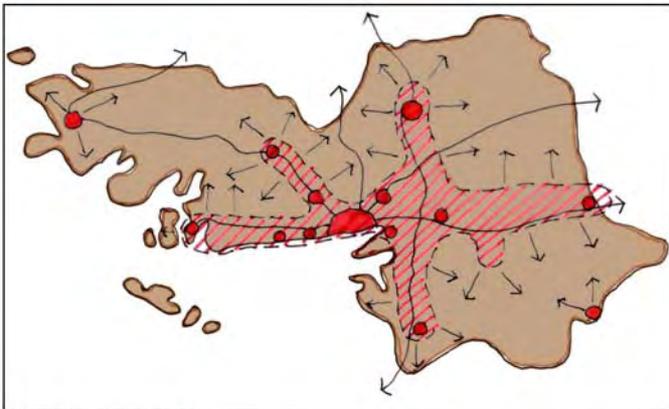
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<sup>13</sup> The catchments of the Cappagh, Kilcrow, Killadullisk and Killoran Rivers

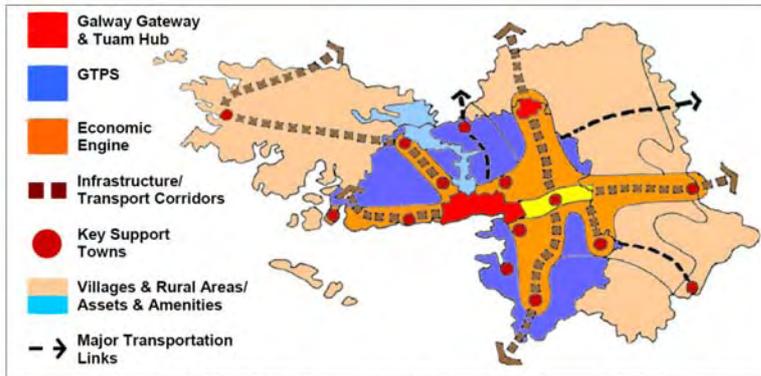
## 5.4 The Preferred Alternative

The Alternatives that were examined were produced and evaluated at an earlier - more embryonic - stage to facilitate evaluation and selection of a plan - having regard, *inter alia* to environmental consequences. The figures below illustrate the comparison between the evaluated Preferred Alternative for the Plan [top] and the Spatial Planning and Settlement Strategy for the County from the County Development Plan [below].

In summary the Plan represents a pragmatic recognition and continuation of established patterns and trends of development in County Galway. These have been modified to take account of the significant environmental sensitivities that exist over very large portions of the County with a view to stabilising both environmental conditions and the populations of those communities who continue to sustain these environments.



**Alternative Scenario 2 -  
Structured Development Strategy  
(Well Developed Urban Structure Supporting Diverse Rural Areas)**



**Illustrative depiction of the spatial planning and settlement strategy for the County from the County Development Plan**

### Summary of Principle Environmental Effects

#### Ecology

Will help to reduce direct, indirect and cumulative effects caused by new developments

Environmental issues associated with existing developments are likely to persist

#### Water

Will help to reduce significant further declines in the status of surface and groundwaters

Will have localised direct, indirect and cumulative positive effects

Environmental issues associated with existing developments are likely to persist

#### Landscape

Will reduce direct, indirect and cumulative effects on the appearance and character of vulnerable and valued landscapes

Issues associated with existing developments are likely to persist

#### Traffic

Lower levels of movements of private cars

Will give rise to stable volumes of traffic with no increases in congestion

#### Other

Localised potential for flooding in L Corrib Basin

Stabilisation of adverse environmental effects on Coast

## Section 6 Mitigation and Monitoring Measures

### 6.1 Mitigation

#### 6.1.1 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 County Development Plan (CDP).

Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration is given in the first instance to preventing such effects or, where this is not possible for stated reasons, 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.

The mitigation measures may be incorporated into the briefing of design teams as well as the subsequent design, specification and development management of the landuses to be accommodated within the County.

### 6.2 Mitigation Measure Topics

Mitigation measures are recommended for the following topics:

- Biodiversity and Flora and Fauna
- Water Protection
- Bathing Water
- Waste Water
- Drinking Water
- Flooding
- Soil and Contamination
- Cultural Heritage
- Landscape
- Air and Climatic Factors
- Transportation
- Waste Management
- Energy/ Energy Conservation

### 6.3 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. The Environmental Report puts forward proposals for monitoring the likely significant environmental effects of implementing the CDP.

Monitoring enables, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. In addition to this, monitoring can also play an important role in assessing whether the CDP is achieving its environmental objectives and targets - measures which the CDP can help work towards - whether these need to be re-examined and whether the proposed mitigation measures are being implemented.

The Environmental Report identifies indicators - which allow quantitative measures of trends and progress in the environment over time. Measurements for indicators should come from existing monitoring sources and no new monitoring should be required to take place.

A preliminary monitoring evaluation report on the effects of implementing the CDP will be prepared within two years of the making of the plan.

Galway County Council are responsible for collating existing relevant monitored data, the preparation of a monitoring report, the publication of this report and, if necessary, the carrying out of corrective action.