

NON TECHNICAL SUMMARY

ENVIRONMENTAL REPORT OF THE DRAFT MIDLAND REGIONAL PLANNING GUIDELINES 2010-2022 STRATEGIC ENVIRONMENTAL ASSESSMENT

for: The Midland Regional Authority

Bridge Centre
Bridge Street
Tullamore
County Offaly



by: CAAS

2nd Floor, The Courtyard
25 Great Strand Street
Dublin 1



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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report of the Draft Midland Regional Planning Guidelines (RPGs) 2010-2022 Strategic Environmental Assessment (SEA). The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in certain areas of Midlands.

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 the Region. The output of the process will be an Environmental Report which should be read in conjunction with the Draft Regional Planning Guidelines.

How does it work?

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

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

What is included in the Environmental Report which accompanies the Draft Guidelines?

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 Guidelines;
- An assessment of the Guidelines' 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 Guidelines.

What happens at the end of the process?

When the Draft Guidelines are adopted a document must be made public, referred to as the SEA Statement.

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

Section 2 The Draft Midland Regional Planning Guidelines

2.1 Outline of the Contents of the Guidelines

The Guidelines address the following:

- Projected population trends and settlement and housing strategies;
- Economic and employment trends;
- Location of industrial and commercial development;
- Transportation (including public transportation);
- Water supply and waste water facilities;
- Waste disposal;
- Energy and communications networks;
- Provision of education, health care, retail and other community facilities; and,
- Preservation and protection of the environment and its amenities, including archaeological, architectural and natural heritage.

The Guidelines are structured into the following chapters and Appendices:

- Chapter 1: Context
- Chapter 2: Vision and Goals for the Region
- Chapter 3: Economic Development Strategy
- Chapter 4: Regional Settlement Strategy
- Chapter 5: Transport and Infrastructure Strategy
- Chapter 6: Environment and Amenity Strategy
- Chapter 7: Tourism Strategy
- Chapter 8: Implementation

Appendices:

- SEA Environmental Report
- Regional Flood Risk Appraisal
- Habitats Directive Assessment
- Glossary of Terms
- Forfás Report

The overall aim of the Midland RPGs is to ensure the successful implementation of NSS at regional, county and local level. The 2004-2010 RPGs for the Midland Region set out a strategic vision for the Region along with strategic goals through which the vision is to be achieved. The vision is as follows:

By 2020, the midland region will be successful, sustainable and equitable region full of opportunities for its expanded population achieved through:

- Enhancing the critical mass of the region by combining the strengths of the linked gateway as envisaged in the NSS with those of the principal towns of Portlaoise and Longford;
- Developing the full potential of rural areas in the region in a manner that is compatible with the strengthening of the urban structure of the region;
- Offering a distinctive lifestyle rooted in a high quality living environment, rich in heritage and landscape value; and,
- Harnessing the central geographical location of the region at the “heart” of Ireland with more inter-regional links than any other region in Ireland to build a strategically focused network of transport and communications links”.

The RPGs propose to meet this vision through the following strategic goals:

- Goal 1: To drive the implementation of the linked gateway, envisaged in the NSS for the Midland Region, within a broader context of a polycentric model centred on the Linked Gateway and Principal towns in the region.
- Goal 2: To provide a comprehensive spatial policy framework, supported by the necessary implementation structures, to harness the strengths of the Midland Region.
- Goal 3: To achieve a regional population of the order of 317,100 by 2022 building on individual strengths of the linked gateway and the two principal towns of Portlaoise and Longford while maintaining and supporting the viability of smaller towns villages and rural areas.
- Goal 4: To ensure that the strategic development of the region works to conserve and enhance the natural and environmental qualities of the region, its biodiversity and habitats.
- Goal 5: To upgrade and augment strategic physical and social infrastructure in the region to attract the target population and sustain critical mass and regional competitiveness.
- Goal 6: To promote the economic development of the region through the development of the social, economic and physical infrastructure demanded by foreign and indigenous industry and that in particular, the education and research resources of the region would be integrated with the needs of industry.
- Goal 7: To expand the tourism sector by creating an integrated approach to facilitate the development of the Midland Region as a unique visitor destination promoting and developing all areas in a balanced and sustainable manner.
- Goal 8: To promote the development of the Region in the delivery of renewable energy particularly recognising the regions existing energy infrastructure.
- Goal 9: To structure the region in a manner that integrates high quality built and physical environment with essential physical and social infrastructure such as transport and water services as well as schools, retail, community, healthcare and recreation/sporting facilities.
- Goal 10: To co-ordinate and target key transport and communications investment within the region in order to create effective communications links and to reduce travel times between the main towns to maximise the cohesion and critical mass of the region and improve intra and inter-regional connectivity.
- Goal 11: To develop and market a distinct and unique image and identity for the region that will attract investment and economic activity to the region.
- Goal 12: To strengthen and sustain rural communities in order to complement urban centres, and contribute to the distinct identity of the region.
- Goal 13: To identify and expand on the opportunities and linkages that exists between the Midland Region and adjoining regions.

2.2 Interactions with Relevant Planning Policy

The Draft RPGs sit within a hierarchy of land use forward planning strategic actions. The Guidelines must comply with higher level strategic actions and will, in turn, guide lower level strategic actions. The following sections identify a number of these strategic actions, further details of which are contained in the Draft Guidelines.

2.2.1 National Spatial Strategy

The National Spatial Strategy (NSS) is a 20-year planning framework for the entire Country to guide policies, programmes and investment. It seeks to promote a better balance of social, economic and physical development between the Regions.

The principal messages within the NSS of particular relevance to the Midland Region can be summarised as follows:

- There is a need to boost critical mass to create more self-sustaining development in the region building from its central location, its proximity to Dublin and its quality of life and natural and cultural heritage attributes.

- There is a need to focus on the implementation of the Linked Gateway (Athlone, Tullamore and Mullingar) to deliver the level of critical mass needed to create more self-sustaining patterns of development where people both live and work within the region avoiding long distance commuting to Dublin.
- The role of the gateway needs to be partnered by a focus on the development role of the principal towns in the region and such towns need to be both supported in acting as engines of growth locally, but also well linked to the Gateway to support it and benefit from it.
- The region benefits strongly from improving transport, communications and energy infrastructure that passes through the region.
- The rural areas in the region are experiencing significant changes but the nature of these changes varies from place to place. Policies must be tailored to local conditions to ensure that the vitality of rural communities is maintained in tandem with a strengthened network of towns and villages and in a way that is sustainable in social, economic, and environmental terms.

2.2.2 National Development Plan 2007-2013

The National Development Plan 2007-2013 (NDP) supports the NSS and is designed to underpin the development of a dynamic competitive economy over the period 2007 - 2013. It envisages a total investment of €184 billion over 7 years to 'secure the further transformation of our country socially and economically within an environmentally sustainable framework'.

It identifies investment funding for significant projects in sectors such as health services, social housing, education, roads, public transport, rural development, industry and water and waste services. One of the general goals of the NSS is to integrate regional development within the framework of Gateway cities and Hub towns to achieve economic growth in the regions and provide for major investment in the rural economy.

2.2.3 Sustainable Development: A Strategy for Ireland 1997

This Strategy provides a framework for the achievement of sustainable development at local level and calls on planning authorities to incorporate the principles of sustainability into Development Plans.

2.2.4 Transport 21

Transport 21 aims to connect communities and promote prosperity, meeting the transport needs of the country and underpinning regional and national competitiveness. It recognises that a quality, integrated transport system is critical for competitiveness, return on investment and regional development. A key objective in the NDP is to create a road network that will see the completion of major inter-urban routes and will upgrade links generally between the NSS Gateway Centres and improve the non-national road network and deliver a radically upgraded public transport system in line with Transport 21 timetables.

2.2.5 Lower Tier Land Use Plans

The RPGs are intended to provide a regional focus, translating the objectives of the NSS into County Development Plans and other lower level plans. Development Plans are key instruments in the development of a county, city or town over a 6-year period, which is prepared through community consultation. It sets the agenda for the sustainable development of the area and translates the key elements of strategic level policies to everyday development decisions.

2.3 Environmental Protection Objectives

The Draft Guidelines are subject to a number of high level national, international and regional environmental protection policies and objectives. 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 by 2015.

The RPGs must be consistent with these objectives and implement them at regional level in the Midlands.

Section 3 Existing Environment

3.1 Introduction - Overlay Mapping of Environmental Sensitivities

In order to identify where most sensitivities within the Region occur, a number of the environmental sensitivities described in the following sections and in the Environmental Report¹ were weighted and mapped overlapping each other. Figure 3.1 provides an overlay of environmental sensitivities in the Midland Region with the Settlement Hierarchy from the Guidelines overlaid onto it.

Environmental sensitivities are indicated by colours which range from acute vulnerability (brown) extreme vulnerability (red) to high vulnerability (dark orange) to elevated vulnerability (light orange) to moderate vulnerability (yellow) to low vulnerability (green). Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration.

Figure 3.1 shows that environmental sensitivities are not evenly distributed throughout the Region - there is strong spatial patterning to the environmental sensitivities. At and near much the Region's western boundary acute, extreme and high levels of sensitivity can be seen reflecting the sensitive nature of the River Shannon and its Loughs. This sensitivity reflects the likelihood of the water bodies to meet the objectives of the Water Framework Directive by 2015. Specific attention – in terms of design standards and financial allocations will need to be directed towards meeting these environmental challenges.

The occurrence of acute, extreme and high levels of sensitivity at the Slieve Bloom Mountains area in Counties Offaly and Laois is reflective of the of numerous ecological designations, sensitive landcover categories, groundwater which is vulnerable to pollution and high amenity areas.

Peatland areas - due to their ecological, hydrological and amenity characteristics - present higher levels of sensitivity than most of the surrounding agricultural areas throughout the Region therefore making these areas readily identifiable on the overlay mapping. This is particularly the case at: the Lough Boora parklands, Clara Bog and Raheenmore Bog (all in County Offaly); Garriskil Bog (County Westmeath); and, Clooneen Bog, Ballykenny-Fisherstown Bog and Brown Bog (all in County Longford).

Likewise, Loughs in the area show higher levels of sensitivity in comparison to surrounding areas and - in addition to Lough Forbes and Lough Ree on the River Shannon in the west of the Region - include: Lough Sheelin, Lough Lene, Lough Owel, Lough Iron and Lough Ennell (all in County Westmeath); and, Lough Kinale and Derragh Lough (in County Longford). The elevated levels of sensitivity which can be seen in the north of County Longford can be attributed to, among other factors, concentrations of views and prospects which are protected under the current Longford County Development Plan.

Levels of sensitivity at a number of settlements throughout the Region, including the Linked Gateway Towns of Athlone, Mullingar and Tullamore as well as the towns of Birr and Longford, and at certain areas in County Laois and east County Offaly have been heightened as a result of the presence of aquifers which are vulnerable to pollution and groundwaters. Meeting the objectives of the Water Framework Directive by 2015 will require specific attention, in terms of design standards and financial allocations.

¹ These sensitivities include: Ecological designations (candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and Nature Reserves); Cultural Heritage (Architectural Conservation Areas, entries to Records of Protected Structures, entries to the Record of Monuments and Places and entries to the National Inventory of Architectural Heritage); High Amenity Areas and Eskers; Protected Views and Prospects; Sensitive Landcover categories (peatlands, deciduous and mixed forests, natural grassland, transitional woodland scrub, inland marshes and water bodies); Aquifer Protection Zones; Entries to the Register of Protected Areas for groundwater that is used for drinking water; Areas at risk of flooding; Surface and groundwaters at significant risk or probably at significant risk of failing to meet the objectives of the Water Framework Directive by 2015; and, Aquifers which are highly or extremely vulnerable to pollution.

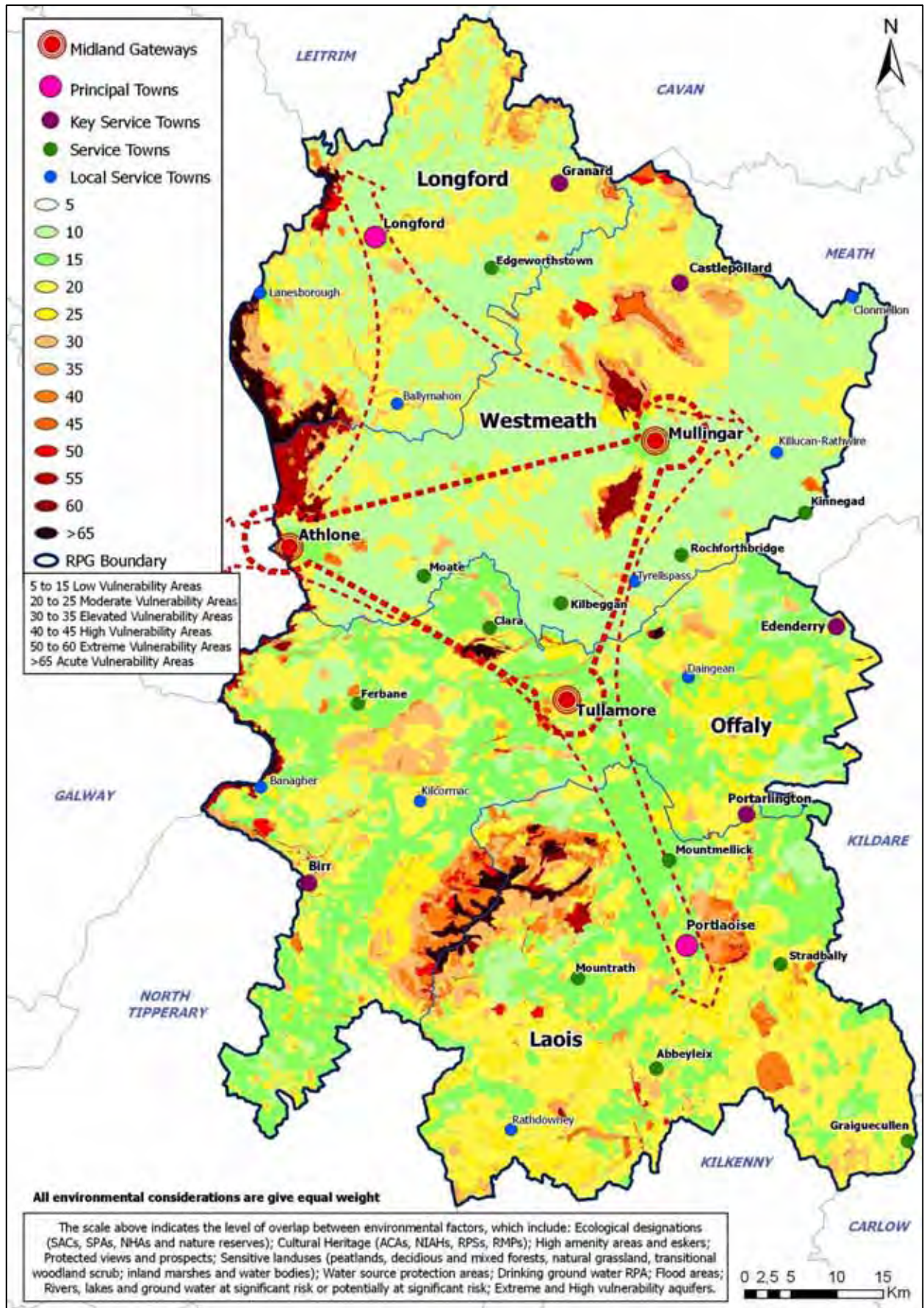


Figure 3.1 Overlay of Environmental Sensitivities with RPGs Settlement Hierarchy

3.2 Biodiversity and Flora and Fauna

3.2.1 Introduction

Water-based habitats are the principal ecological resources in the Midland Region. They vary considerably in their character and extent -ranging from the very extensive Shannon system and the Midland peatlands to much smaller scale lakes and rivers. However, all systems are interconnected and inter-dependant, the peatlands to a lesser extent, pointing to the need to consider problems and solutions at a regional scale.



Figure 3.2 SPAs, cSACs, NHAs and Nature Reserves in the Region

3.2.2 Designations

3.2.2.1 Introduction

Figure 3.2 maps a range of designated ecological sites (Special Protection Areas, candidate Special Areas of Conservation, Natural Heritage Areas and Nature Reserves²) across the Midland Region. In general terms the northern and western fringes of the region have higher concentrations, greater sensitivity and larger areas of ecological designations – especially along the Shannon system – with the Slieve Bloom Mountains as well as some larger bog systems being designated elsewhere in the centre of the region. Certain lakes in the west and centre of the region are designated water-based habitats.

3.2.3 Existing Biodiversity and Flora and Fauna Problems

The site synopses for some of the designated sites in the Region identify certain threats to the conservation value of the protected sites. Threats, such as degradation and drainage of peatlands, dredging of waterbodies, overgrazing, soil erosion or invasion by non-native species may arise as a result of incompatible land uses.

² Site Synopses for SPAs, cSACs and NHAs are available from the National Parks and Wildlife Service at www.npws.ie

There are existing problems with regard to surface water quality in the Region (see Section 3.5) which are likely to be impacting upon aquatic biodiversity and flora and fauna.

3.2.4 Evolution of Biodiversity and Flora and Fauna in the absence of the Guidelines

In order for the continued sustenance of rural communities - as identified by higher level policy, diversification of the rural economy will be required, particularly in light of changes in agricultural practices. This diversification will lead to changing landuses.

The continued reform of income support for agriculture (CAP) is likely to give rise to a gradual but persistent lessening in the intensity and extent of agriculture as the dominant land management regime over many parts of the Midland Region. As a result many farms, particularly on marginal soils, elevated areas, and poorly drained areas - are likely to either be converted to low-intensity uses such as forestry or abandoned. Both scenarios will entail significant changes in the ecology, appearance and character of many rural areas - as well as their associated social and economic structures.

The Midland Region contains significant areas of industrial peatlands - much of it in semi-state ownership. As the working lives of these areas draws to a close they will be subject to rehabilitation requirements by the operating license conditions. The future of such areas will also be significantly determined by the Habitats Directive which recognises peatlands with a potential to be rehabilitated as priority habitats. Both of these factors may limit the range and type of future uses for such areas.

The evolution of biodiversity and flora and fauna would be dependent upon the nature of lower tier development and local area plans which are required to contain objectives for the protection of the environment and sustainable development.

Development along or adjacent to the banks of rivers such as the Shannon or Brosna could result in a reduction in ecological connectivity within and between these and other habitats.

Pollution of water bodies as a result of any inappropriately sited or managed future developments along rivers would be likely to adversely impact aquatic biodiversity and flora and fauna including salmonid species and other species protected under the Habitats Directive.

Beneficial effects upon biodiversity and flora and fauna which would be likely to arise out of the specific policies and objectives included in the Guidelines would be dependent upon the inclusion of the same or similar policies and/or objectives in lower tier development and local area plans. These lower tier plans are required to contain objectives for the protection of the environment and sustainable development and are at a minimum required to undergo screening for SEA.

If current development trends were to continue in the absence of the Guidelines, growth would be likely to continue to occur mainly in the east of the Region.

3.3 Population and Human Health

3.3.1 Population³

Between 2002 and 2006 the population of the Midlands grew by 11.6%, from 225,363 in 2002 to 251,664 in 2006. This growth rate is the second highest out of the eight regions, second only to the Mid-East Region.

³ CSO (various) *Census 2006 Volume 1 - Population Classified by Area; Census 2002 Volume 1 - Population Classified by Area; Census 1996 Volume 1 - Population Classified by Area* Cork: CSO.

Much of the significant growth in the Region has taken place around the main urban centres and along the main roads in the eastern part of the Region, which is located in close proximity to the Greater Dublin Area.

The Midland Region is predominantly rural in nature with 149,945 or approximately two thirds of the Region's population residing in rural areas. At 38 persons per square kilometre in 2006, the Region had the second lowest population density out of the eight Regions.

3.3.2 Existing Problems

Flooding (see Section 3.5.6) has occurred at various locations within the Region and has impacted upon the Region's inhabitants.

There are currently 11 water supplies listed on the EPA's Remedial Action List (see Section 3.6.5) which identifies water supplies which are not in compliance with the European Communities (Drinking Water) Regulations, 2000. Although not identified as being a current problem for human health, some of the reasons for which certain supplies are listed - such as failure to meet the E. coli standard or inadequate treatment for Cryptosporidium - have the potential to adversely impact upon human health.

3.3.3 Evolution of Population and Human Health in the absence of the Guidelines

In the absence of the Guidelines, the preparation of a regionally co-ordinated strategy for the provision of water services infrastructure to serve existing and future development - as is provided for by Policy 23 in Chapter 5 *Transport and Infrastructure Strategy* - would be less likely. If water services provision was not addressed by Water Services Authorities then avoidable delays in water services could occur which would have the potential to result in adverse effects on environmental vectors to which humans are exposed i.e. a lack of appropriate waste water treatment infrastructure could adversely impact upon drinking water quality and subsequently upon human health.

3.4 Soil

3.4.1 Introduction

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.

Certain areas of the raised and blanket peat are internationally important - supporting a large variety of rare flora and fauna - and large areas are protected by a number of ecological designations. In addition to being a valuable ecological resource, the bogs provide employment within the Region through activities such as harvesting, tourism and agriculture.

3.4.2 Mines and Quarries

Quarrying is well developed throughout the Region due to the presence of large amounts of glacial deposits in the form of eskers.

3.4.3 Eskers

Eskers are narrow, winding ridges of stratified gravelly and sandy drift which were deposited in rivers of meltwater flowing on, in, or under glacial ice. The eskers are of geomorphologic, scientific, ecological, recreational and amenity value and uniqueness. They also have archaeological significance, as they formed the early highways in Ireland.

The most comprehensive of the eskers is the Eiscir Riada which runs in an east/west direction across Ireland, dividing the Island into two roughly equal parts. The esker is flanked by boglands in County Offaly and runs in a more or less continuous line from Shannonbridge to Clonmacnoise and onto Clara, Durrow and Rahugh, County Westmeath.

Certain eskers across the Region are likely to provide nutrient rich water which feeds the bogs' soak systems across the Region.

3.4.4 Existing Problems

Land cover differences between the CORINE 2000 data and the data for the year 1990 indicate that semi natural areas within the Region are being replaced by urban areas - this is likely to be resulting sealing off of soil resources.

Certain parts of the Region are not within the catchment of waste water treatment networks and consequently development in these areas uses septic tanks systems to treat waste water arising - it is likely that local pollution of soil is occurring in certain areas as a result of poorly maintained systems.

Quarrying activities has been undertaken on a number of eskers within the Region and has resulted in the removal of parts of eskers.

3.4.5 Evolution of Soil in the absence of the Guidelines

In the absence of Guidelines, there would be no regional framework for the direction of growth towards existing settlements. As a result greenfield development would be more likely to occur on an increased basis and would result in the building upon and thereby sealing off of the non-renewable subsoil and soil resources. It is noted however that lower tier development plans are required to include objectives for the development and renewal of areas in need of regeneration - such objectives could improve efforts to maximise brownfield development. Local area plans are required to include objectives for sustainable development.

3.5 Water

3.5.1 Introduction

Water within and surrounding the Region has many functions: it provides drinking water to the area's population; it sustains the biodiversity and flora and fauna described above; it provides amenity; and, it is an integral part of the landscape.

3.5.2 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.

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.

3.5.3 The Water Framework Directive

3.5.3.1 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 by 2015. 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 by 2015.

3.5.3.2 River Basin Districts and Water Bodies

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 management of water resources will be on these river basin districts. River catchments which are partially or fully located within the Midland Region within the various River Basin Districts (RBDs) are as follows: Shannon International RBD - River Shannon Catchment; South Eastern RBD - River Barrow Catchment, River Nore Catchment and River Suir Catchment; Eastern RBD - River Boyne Catchment; and, North Western International RBD - River Erne Catchment. It is noted that both the Suir and Erne Catchments drain relatively small areas of the Region.

The majority of counties Longford, Westmeath and Offaly are located within the Shannon International River Basin District while the majority of County Laois is located within the South Eastern River Basin District. Relatively minor areas of the Region are located within the Eastern River Basin District and the North Western International River Basin District.

3.5.4 Surface Water

3.5.4.1 EPA Monitoring

Water quality within the Midland Region is monitored by the EPA at a number of locations.

The most recent water quality data⁴ identifies multiple points on rivers throughout the Midland Region as being of Moderate (Q3-4), Poor (Q2-3, Q3) or Bad Status (Q1)⁵. Specifically, the data shows that the quality of rivers leaving the main settlements within the Midland Region does not achieve the Good (Q4, Q4-5) or High Status (Q5) standard that is required by the Water Framework Directive (e.g. the Camlin River at Longford, the Brosna River at Mullingar, the Shannon River at Athlone, the Tullamore River at Tullamore and the Triogue River at Portlaoise).

The EPA classifies lakes according to their trophic status⁶. There are a number of lakes within the Region which have been classified by the EPA and which occur either in County Westmeath or on the County border of Longford.

In Westmeath Lough Ennell, Lough Owel, Lough Derravaragh, Lough Lene and Lough Bane are all classified as being oligotrophic/mesotrophic. Mesotrophic lakes are lakes with an intermediate level of

⁴ EPA (various) *Water Quality in Ireland* Wexford: EPA

⁵ The Biotic Index Values, or Q values, are assigned to rivers in accordance with biological monitoring of surface waters - low Q ratings, as low as Q1, are indicative of low biodiversity and polluted waters, and high Q ratings, as high as Q5, are indicative of high biodiversity and unpolluted waters. Good status as defined by the Water Framework Directive equates to approximately Q4 in the national scheme of biological classification of rivers as set out by the EPA.

⁶ Nutrient enrichment, resulting in eutrophication, is the principal pressure on lake quality in Ireland. Nutrient inputs result in plant growth in lakes whose presence is quantified by a measure of the algal pigment chlorophyll. Lake trophic status, or the extent to which a lake is nutrient enriched, is determined by a consideration of the annual maximum chlorophyll values. Trophic Status ranges from Oligotrophic/Mesotrophic to Moderately Eutrophic to Highly/Strongly Eutrophic to Hypertrophic.

productivity, greater than oligotrophic lakes, but less than eutrophic lakes. Lough Glore and Lough Sheelin are both classified as being highly/strongly eutrophic.

In Longford, Lough Forbes, Lough Sallagh and Lough Kinale are classified as being oligotrophic/mesotrophic. Lough Tully and Lough Annagh are classified as being moderately eutrophic, Lough na Bach is classified as being highly/strongly eutrophic while Lough Gowna is classified as being hypertrophic - this is the most enriched status and only 13 lakes in the Country have been attributed this classification. Good status as defined by the Water Framework Directive equates to mesotrophic in the trophic classification of lakes, as set out by the EPA.

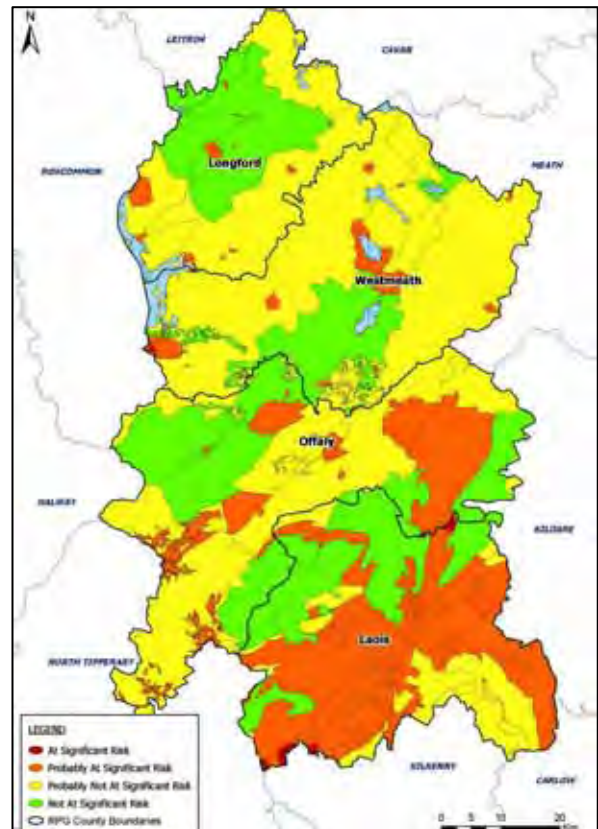


Figure 3.3 Risk Assessment of Rivers and Figure 3.4 WFD Risk Assessment of Ground Water

3.5.5 Groundwater

3.5.5.1 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.

Groundwater issues in the Region principally arise from the cumulative effects of agricultural intensification and a proliferation of under-performing septic tank systems which mean that many vulnerable groundwater resources in the Midland Region are at risk of not meeting appropriate quality standards.

Significant water supplies in the Region are derived from ground water reserves. Groundwater abstractions in the east of County Laois and in parts of eastern Offaly could alone or in combination with either groundwater abstractions in the west of County Kildare or surface water abstractions reduce the low-flow characteristics of the Barrow River System during drought thereby intensifying water stresses.

3.5.5.2 WFD Risk Assessment of Groundwater

The Risk Assessments for groundwater indicate problems in the south of the Midland Region - much of the groundwater in County Laois is classified as being *probably at significant risk* of failing to achieve the objectives of the Water Framework Directive by 2015 while the same classification is attributed to groundwater in the east of County Offaly and beneath a number of settlements including Athlone, Birr, Longford, Mullingar and Tullamore.

3.5.6 Flooding

3.5.6.1 Introduction

Flooding is an environmental phenomenon which, as well as having causing economic and social impacts, could in certain circumstances pose a risk to human health. The Midlands Region is vulnerable to adverse effects which are exacerbated by changes in the occurrence of severe rainfall events and associated flooding of the Region's rivers. Local conditions such as low-lying lands and inadequate surface water drainage increase the risk of flooding. The risk of flooding has also been increased in the past by human actions including the clearing of vegetation to make way for agriculture, draining of bog and wetland areas and the development of settlements in the flood plains of rivers. Infrastructural development, culverting, forestry operations and all urban development in the floodplain present ongoing flooding hazards. Increased surface water runoff due to construction of new hard surfaced areas is now generally not as significant a problem as it was in the past in terms of its impact on peak flows because of the implementation of Sustainable Urban Drainage Systems (SUDS).

3.5.6.2 Regional Flood Risk Assessment of the RPGs

A Regional Flood Risk Appraisal (RFRA) which has been undertaken for the Guidelines informs the Environmental Report. This RFRA contains a regional scale flood risk evaluation. The need for specific flood risk assessments of settlements through the Region is prioritised on the basis of this evaluation, the tiering of settlements under the RPGs and whether up-to-date flood management studies have been carried out for at risk areas or not.

The Region and its designated settlements (Gateway Towns, Principal Service Towns, Key Service Towns, Service Towns and Local Service Towns) are analysed in the RFRA using a GIS system for the occurrence of three indicators of flood risk potential:

- Office of Public Works (OPW) Flood Events mapping⁷
- OPW Flood Extents mapping⁸; and
- Mineral Alluvial Soil mapping⁹.

The largest occurrence of *Flood Extents* in the Region is along the River Shannon's floodplain which runs along most of the west of the Region. *Mineral Alluvial Soils* which are an indication of potential flood risk are most predominant in Counties Offaly and Laois. Mineral Alluvial Soils also occur but are less predominant in Counties Longford and Westmeath. Multiple *Flood Events* have been recorded in the three Linked Gateway Towns (Athlone, Mullingar and Tullamore), in the Principal Towns (Longford and Portlaoise) and in four Key Service Towns (Birr, Edenderry, Granard and Portarlington).

In order to identify where addressing flood risk is likely to be most important and which settlements should be prioritised for further consideration of potential flood risk through, for example, Flood Risk Assessment, a scoring system was used. The Linked Gateway and Principal Towns emerged as having the highest priority levels on account of their importance within the Guidelines and due to the incidence of the flood risk factors. Some of these have had flood studies carried out in recent years and these studies need to be reviewed in light of the *Planning Guidelines on the Planning System and Flood Risk Management* and revised where necessary to ensure compliance. The need for preparation of an inter-regional Shannon Catchment Flood Risk Assessment and Management Plan also emerged as a priority.

⁷ Historical OPW dataset which defines the extent of a flood over an area based on existing mapped flood extent information

⁸ Historical OPW dataset which marks the approximate location of a flooded area

⁹ An Teagasc dataset

Arising from the RFRA, a number of measures relating to flood risk management have been integrated into the RPGs.

3.5.7 Existing Water Problems

There are environmental problems in Region with regard to water quality which have the potential for significant adverse impact upon human health, drinking water supplies, biodiversity and flora and fauna.

Water quality data identifies multiple points on rivers throughout the Midland Region as being of Moderate, Poor or Bad Status. The data also identifies that a number of lakes are classified as being moderately eutrophic, highly/strongly eutrophic or hypertrophic.

The main rivers in the Region together with all their tributaries are almost entirely classified by the Risk Assessments contained in the Characterisation Reports of the various River Basin Districts as being either *at significant risk* or *probably at significant risk* of failing to achieve the objectives of the Water Framework Directive by 2015. All lakes in the Region which have been classified are either *at significant risk* or *probably at significant risk*.

Waste water treatment plants, combined sewer and treatment plant overflows, channelisation and diffuse sources such as agriculture are among the main contributing reasons for such classifications of surface waters within the Region.

Groundwater issues in the Region principally arise from the cumulative effects of agricultural intensification and a proliferation of under-performing septic tank systems which mean that many vulnerable groundwater resources in the Midland Region are at risk of not meeting appropriate quality standards. The Risk Assessments for groundwater indicate problems in the south of the Midland Region - much of the groundwater in County Laois is classified as being *probably at significant risk* of failing to achieve the objectives of the Water Framework Directive by 2015 while the same classification is attributed to groundwater in the east of County Offaly and beneath a number of settlements including Athlone, Birr, Longford, Mullingar and Tullamore.

Groundwater pollution is a serious problem because significant water supplies in this Region are derived from ground water reserves.

Groundwater abstractions in the east of County Laois and in parts of eastern Offaly could alone, or in combination with either groundwater abstractions in the west of County Kildare or surface water abstractions, reduce the low-flow characteristics of the Barrow River System during drought thereby intensifying water stresses.

Bathing water quality at Lilliput, Lough Ennell was identified as being of a *poor* water quality in 2008.

Flooding has occurred at various locations within the Region.

3.5.8 Evolution of Water in the absence of the Guidelines

Based on the current risk assessments the identified surface and ground water bodies are either *at significant risk* or *probably at significant risk* of failing to meet the objectives of the Water Framework Directive by 2015.

If growth is not accompanied by appropriate waste water infrastructure/capacity then it is likely that:

- Certain river and ground water bodies would fail to meet the objectives of the WFD by 2015; and,
- Significant adverse impacts upon the biodiversity and flora and fauna of the Region could potentially arise.

In the absence of RPGs new development would be likely to continue existing trends and locate in the east of the Region, closest to the Greater Dublin Area - this would however be dependent upon the nature of provisions contained in lower tier development and local area plans. The absence of a regional framework directing development towards existing settlement centres would be likely to result in elevated levels of rural development which would be difficult to serve with waste water treatment infrastructure - this could lead to impacts upon surface and ground waters and drinking water sources.

Increased development in the east of the Region would lead to increased pressure on ground waters which, if not managed, could reduce the flow in certain surface waters thereby adversely impacting upon water quality.

In the absence of Guidelines, there would be no regional framework for the direction of growth towards existing settlements. As a result, greenfield development would be more likely to occur on an increased basis and could lead to an elevated replacement of semi-natural land cover types with artificial, more impervious surfaces which would be likely to lead to cumulative increases in run-off and peak flow conditions in some of the Region's smaller river bodies. These cumulative increases would have the potential - especially in combination with the occurrence of severe rainfall events – to result in increased flooding. It is noted however that lower tier land use plans would be required to comply with the requirements of the DEHLG's *The Planning System and Flood Risk Management Guidelines for Planning Authorities*.

3.6 Material Assets

3.6.1 Waste Water

The treatment of wastewater is governed by the Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC) transposed into Irish law by the Urban Waste Water Treatment Regulations 2001 (SI 254 of 2001). The Directive aims to protect the environment from the adverse effects of the wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. The Regulations stipulate that sewage treatment facilities are in place in all towns by 2005. The treatment of wastewater is also relevant to the Water Framework Directive which requires all public bodies, including the Midland Authority, to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and bring polluted water bodies up to good status by 2015 (see Section 3.5 *Water*).

3.6.2 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.

3.6.3 Waste

A Waste Management Plan for the Region, together with Tipperary North has been drawn up. The Plan recognises the necessity for adequate waste management infrastructure within the Region. According to the Pilot Strategic Environmental Assessment of the replacement Midlands Waste Management Plan 2005-2010¹⁰, 60% of municipal waste and 76% of household waste is disposed of in landfill annually, and there is approximately 5-10 years of landfill capacity remaining in the Region.

3.6.4 Vehicular Circulation

The Midlands Region is traversed by four motorway corridors (the N4, M6/N6, M7/N7 and N8) as well as rail lines to Sligo, Galway, Mayo and Limerick/Cork from Dublin. Close proximity and good connections to

¹⁰ Pilot Strategic Environmental Assessment of the replacement Midlands Waste Management Plan 2005-2010 (2005) *Environmental Report*: COWI/RPSMCOS

Dublin Airport present a convenient entry point for international business connections. The central location of the Midlands means that it is easily accessed from all parts of Ireland.

3.6.5 Existing Problems relating to Material Assets

The EPA publication *Urban Waste Water Discharges in Ireland for Population Equivalents Greater than 500 Persons - A Report for the Years 2006 and 2007* (EPA, 2009) identifies that a number of settlements within the Region - including Mullingar, Portllington, Portlaoise and Tullamore - were not in compliance with the Urban Waste Water Treatment Regulations 2001.

A number of settlements have shortfalls in capacity and are operating over capacity.

Certain parts of the Region are not within the catchment of the waste water treatment network and consequently development in these areas use septic tanks to treat waste water arising. This has the potential to be a problem for other environmental components where the systems are not properly maintained.

There are currently 11 water supplies listed on the EPA's Remedial Action List. The most common reasons for this include excessive levels of nitrate or aluminium, failure to meet the E.coli standard and inadequate treatment for Cryptosporidium.

The water treatment plants providing water to Portlaoise, Portllington and Longford are severely overstretched and while upgrades are planned for these plants, the degree of the upgrades is unknown. Water treatment plants at Edenderry and Daingean are operating at capacity while there is only a small amount of extra supply capacity at Ferbane, Kilcormac and Lanesborough.

The majority (76%) of household waste is disposed of in landfill annually. There is a limited (approximately 5-10 years) landfill capacity remaining in the Region.

3.6.6 Evolution of Material Assets in the absence of the Guidelines

In the absence of Guidelines, there would be no regional framework for the direction of growth towards existing settlements. As a result, greenfield development would be more likely to occur on an increased basis and could lead to the proliferation of septic tank systems which could, if poorly maintained, adversely effect a number of environmental components including biodiversity, human health and water resources. It is noted however that lower tier land use plans are required to contain objectives for the protection of the environment and sustainable development and are at a minimum required to undergo screening for SEA.

3.7 Air and Climatic Factors

3.7.1 Introduction and Legislation

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. Air Quality is monitored at the following location in the Region: Westmeath at Athlone (WH2) and Mullingar (WH3); Offaly at Ferbane (OY1); and Laois at Emo Court (LS1), Mountrath (LS2) and the Ridge of Capard (LS3). Current air quality in the Region is good.

3.7.2 Potential Point Sources of Emissions to Air

3.7.2.1 IPPC Licensed Facilities

The EPA has been licensing certain large-scale industrial and agriculture activities since 1994. Originally the licensing system was known as Integrated Pollution Control (IPC) licensing, governed by the Environmental Protection Agency Act, 1992. The Act was amended in 2003 by the Protection of the Environment Act, 2003 which gave effect to the Integrated Pollution Prevention Control (IPPC) Directive. Detailed procedures concerning the IPPC licensing process are set out in the EPA Acts 1992 to 2007 and the associated licensing regulations. There are approximately 47 IPPC licensed facilities distributed throughout the Region.

3.7.2.2 Waste Licensed Facilities

In 1996 the EPA began licensing certain activities in the waste sector. These include landfills, transfer stations, hazardous waste disposal and other significant waste disposal and recovery activities.

A waste license is a single integrated license dealing with emissions to all environmental media and the environmental management of the facility. All related waste operations connected to the activity are considered in determining a license application. The EPA must be satisfied that the activity will not cause environmental pollution when carried on in accordance with the license conditions. Detailed procedures on processing waste license applications are set out in the Waste Management Act, 1996 which was amended by the Protection of the Environment Act, 2003 and associated regulations. There are approximately 11 waste licensed facilities distributed throughout the Region.

3.7.3 Existing Problems

No Regional problems with regard to air or climatic factors in the Region.

See also Section 3.5.6 Flooding.

3.7.4 Evolution of Air and Climatic Factors in the absence of the Guidelines

Increases in the use of catalytic converters, cleaner fuels, better engine technology and maintenance is generally reducing the pollution omitted per motor vehicle, however, this reduction is probably being offset by the increase in the number of cars as well as the increase in the volume and incidences of traffic congestion. Increases in the number of cars as well as the increase in the volume and incidences of traffic congestion may lead to increases in air and noise pollution in the future.

If new dispersed development occurs in the Region, adverse impacts upon air quality and noise levels, and resultant impacts upon human health, would be likely to arise if unmitigated.

3.8 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. Human interaction with the land is evident from the earliest of times up to the present in the Midlands Region, from agricultural landscapes to archaeological remains to growing urban centres.

3.8.1 Existing Cultural Heritage Problems

No Regional problems were identified with regard to cultural heritage.

Threats to cultural heritage include the cumulative accommodation of large scale development in the Region, development which involves material alteration or additions to protected structures, brownfield development and development on sites adjoining protected monuments, places or structures.

3.8.2 Evolution of Cultural Heritage in the absence of the Guidelines

In the absence of the Guidelines, the evolution of cultural heritage would be dependent on developments which take place. Such development would have to comply with the provisions of lower tier development plans and local area plans which are required to contain objectives for the protection of the environment - which includes cultural heritage - and sustainable development and which are at a minimum required to undergo screening for SEA.

3.9 Landscape

3.9.1 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;
- land cover, which includes vegetation, water, human settlements;
- human values which are a result of historical, cultural, religious and other understandings and interactions with landform and land cover.

3.9.2 Landscape Character

While the Midlands Region contains a number of very distinctive and different types of landscapes almost all – with the exception of the Slieve Bloom Mountains – may be characterised as being relatively flat, lowland landscapes with low levels of enclosure.

Many parts of these landscapes, such as the River Shannon, The Royal Canal, The Bog of Allen and The Slieve Bloom Mountains are valued as both iconic and amenity landscapes that contain scenic routes, walking trails and tourism centres.

These landscapes also contain nationally significant historic and cultural landscapes, often containing archaeological and architectural monuments – such as Clonmacnoise, Belvedere Castle, Emo Court and Birr Castle.

With the exception of the areas mentioned, the majority of the region may be termed a long established working landscape which comprises a complex and constantly changing mosaic of agriculture, forestry, bogs, settlements and infrastructure corridors for power and transports.

3.9.3 Existing Landscape Problems

Generalised landscape problems include the cumulative visual impact resulting from developments such as one off houses. Such developments, which individually often do not have significant adverse impacts, have the potential to cumulatively and adversely significantly impact upon sensitive landscapes. This problem becomes acute in areas such as the vicinity of the Shannon, Lough Ree and the lakes of Westmeath where lands with views across water-bodies are much sought after and experience intense pressure for development, in order to enjoy the views of water.

3.9.4 Evolution of Landscape in the absence of Regional Guidelines

Development management, at a County level, will continue to safeguard the landscape resources that have been highlighted above. However a more co-ordinated approach to landscape characterisation may assist in the pursuit of better inter-county policies for landscape protection and for strategies to manage large-scale development types such as wind energy and transmission projects.

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 scenarios for accommodating future growth in the Midland Region.

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

This section identifies, describes and evaluates different alternative development scenarios, taking into account higher level strategic actions as well as the geographical scope of the Midland Region.

The scenarios are evaluated resulting in the identification of potential effects and informing the selection of a preferred alternative for the Draft RPGs. The policies and objectives which are required to realise the preferred alternative are evaluated in the Environmental Report.

Mitigation measures attempt to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the preferred alternative have been integrated into the Draft RPGs - these are summarised in Section 5.

4.2 Description of Alternative Plan Scenarios

4.2.1 Introduction

The following summarises a series of 'scenarios' which provide alternative visions of how the future development of the Midland Region might occur.

These are neither predictions nor preferences - they represent the range of development options within the statutory and operational requirements of the Midland RPGs. The descriptions, including the mapping, provides the basis for the comparative evaluation of the likely significant environmental effects of each RPG scenario, which in turn serves the purpose of identifying which features of strategies and policies are likely to be sensitive or robust over the widest range of circumstances.

For the purposes of the Guidelines, the Midland Region could develop within one of three possible development scenarios outlined below, within an overall scale of population growth in the Region of 75,000 - in accordance with national guidance - translating into a total projected population for the Midlands of c. 325,800 by 2022¹¹.

¹¹ The growth rate has been determined using the 2006 Census figures as the base year i.e. population of the Midland Region in 2006 was 251,664 and is now projected to grow to 325,800 by 2022 – increase of 74,136.

4.2.2 Scenario 1: *Exclusively Gateway Focused Development*



Schematic Map

Under this scenario, illustrated above, future projected population and housing growth in the Region would be focused exclusively on the Midlands Linked Gateway of Athlone, Tullamore and Mullingar to the benefit of very substantial growth of the Gateway compared to the rest of the Region. There would be certain merits in such an approach, including focusing growth into a small number of locations, the substantial critical mass of population and services that would be created and efficiencies in the provision of physical and social infrastructure.

However, such a scenario would have other negative effects because development throughout the remainder of the Region, including the two principal towns of Longford and Portlaoise would be heavily restricted. Accordingly, the Northern Development Area and the Southern Development Areas would be static in development terms and there would be a real challenge in achieving a sustainable balance of development between urban and rural areas, indeed rural depopulation would arise undermining the viability of rural communities and services. Additionally, there would be underutilisation of existing public infrastructure such as water services that have been provided in various locations throughout the Region.

The repercussions for the wider region, should growth be centred entirely on the linked gateway, would be imbalanced regional development at variance with the overall principles of the NSS in promoting the Gateways on the one hand as national and regional drivers of development, while promoting the development of their wider regions.

4.2.3 Scenario 2: *Balanced Development of the Gateway and its Wider Region*



Schematic Map

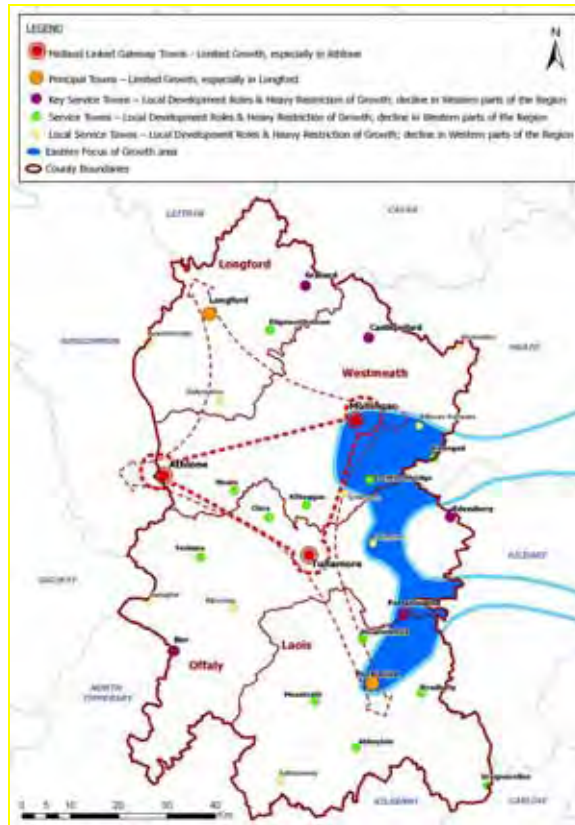
In this scenario, illustrated above, the Gateway would experience the bulk of population growth in the Region to progress its role as a 'driver' for the Region while the Principal Towns would also be a substantial focus for future growth and would retain and strengthen their roles as another key element of the urban structure of the Region. There would also be provision for the development of wider county areas but in a balanced and sustainable manner.

In terms of economic development, the Gateway would capitalise on its designation and utilise its linked status to build up enterprise and employment niches that supplement and support each other and the development of the Principal Towns would support the development of the Gateway by enhancing the overall labour-force of the Region and the services and amenities the Region can offer.

In support of the Gateway and the Principal Towns, other towns and villages would perform local development roles in line with an overall and coherent regional settlement strategy including:

- Key Service Towns (Edenderry, Portarlington, Granard, Birr and Castlepollard)
- Service Towns (Moate, Kinnegad, Rochfortbridge, Kilbeggan, Abbeyleix, Graiguecullen, Mountmellick, Mountrath, Stradbally, Fermagh, Clara, Edgeworthstown)
- Local Service Towns (Rathdowney, Killucan-Rathwire, Tyrrellspass, Clonmellon, Banagher, Kilcormac, Daingean, Lanesborough and Ballymahon)

4.2.4 Scenario 3: *Continuation of Historical Development Trends*



Schematic Map

While the development of the Midland Region has been marked by successes in recent years, especially the rapid development of the Linked Gateway towns and Principal Towns, this scenario, illustrated above, would envisage a resumption of longer running and historical trends and especially a large focus of growth in the Eastern Development Area, including towns on the main motorways from Dublin into the Region, more limited growth in some of the Linked Gateway towns, especially Athlone and population decline in many western parts of the Region as part of an overall east-west divide.

The resumption of historical trends, though plausible, would weaken the Gateway resulting in imbalanced regional development with development taking place across a large number of settlements within the Midland Region competing for diminishing investment in water services and resulting in jeopardising the ability of the Linked Gateway and Principal Towns to fulfil their respective roles within the Region.

4.3 Evaluation of Alternative Plan Scenarios

This section summarises the relative merits of three alternative development scenarios for accommodating future growth in the Midland Region.

Scenarios are evaluated against both the existing environment - which is summarised in Section 3 - and the Strategic Environmental Objectives (SEOs) shown below.

SEO Code	SEO
B1	To ensure compliance with the Habitats Directive with regard to the protection of Natura 2000 Sites
B2	To ensure compliance with Article 10 of the Habitats Directive protection of regionally important macro-corridors and contiguous areas of habitat which are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species
B3	To sustain existing 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
HH1	To protect human health from hazards or nuisances arising from exposure to incompatible landuses
S1	To prevent pollution and/or contamination of soil
W1	To maintain and improve, where possible, the status of surface waters
W2	To prevent pollution and contamination of ground water
W3	To manage areas that are currently at risk of flooding or are likely to pose a significant flood risk in the future
C1	To reduce travel related greenhouse emissions to air
C2	To encourage modal change from car to more sustainable forms of transport
M1	To serve growth areas with appropriate waste water treatment
M2	To serve growth areas with drinking water that is both wholesome and clean
CH1	To protect the archaeological heritage of the Region including entries to the Record of Monuments and Places and/or their context
CH2	To preserve and protect the special interest and character of the Region's architectural heritage
L1	To avoid significant adverse impacts on the landscape, especially with regard to sensitive landscapes and designated scenic views

Table 4.1 Strategic Environmental Objectives (SEOs)¹²

Difficulties Encountered in the Assessment

The lack of a centralised data source that could make all environmental baseline data for the Region both readily available and in a consistent format posed a challenge to the SEA process. This difficulty is one which has been encountered while undertaking lower-tier SEAs at local authorities across the Country and was overcome by investing time in the collection of data from various sources and through the use of Geographical Information Systems.

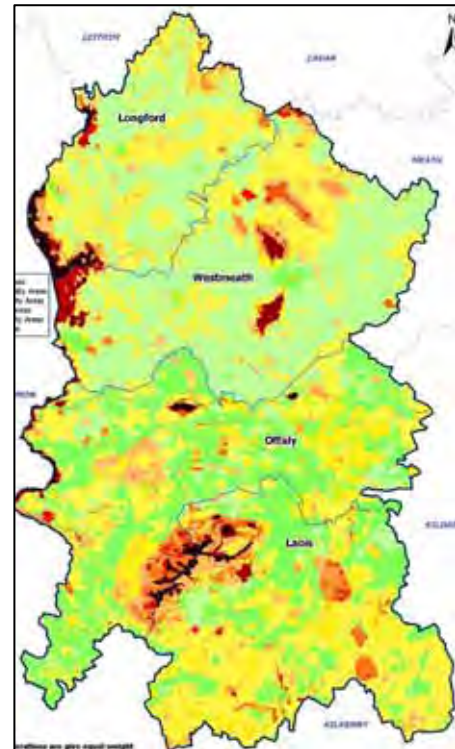
¹² Strategic Environmental Objectives (SEOs) are methodological measures which are developed from international and national policies which generally govern environmental protection objectives and against which the environmental effects of the Draft RPGs and the alternatives can be tested. The SEOs are used as standards against which the provisions of the Draft RPGs can be evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated against.

4.3.1 Examples of Mapping used in the Evaluation

Overlay Mapping

Composite mapping (right) shows that environmental sensitivities are not evenly distributed throughout the Region - there is strong spatial patterning to the environmental sensitivities.

Further composite environmental mapping is shown on the following page with schematic maps for each of the 3 scenarios.



Ecological Sensitivities

In general terms the northern and western fringes of the Region have the highest concentrations and largest extents of ecological designations – especially along the Shannon system – with the Slieve Bloom Mountains as well as some larger bog systems being designated elsewhere in the centre of the Region. Certain lakes in the west and centre of the Region are designated water-based habitats.

The expansion of Athlone could both alone and in combination with the expansion of the Monksland area in County Roscommon (which is located within the Western Region) threaten the ecological sensitivity of the Shannon Callows.



4.3.2 Scenario 1: *Exclusively Gateway Focused Development*¹³

This scenario concentrates significant population pressures into established settlements - while this appears to have advantages in theory, it will require specific attention – in terms of design standards and financial allocations to address environmental challenges that occur in these areas.

The apparent advantages consist of minimising the potential for dispersed groundwater pollution and associated effects on sensitive surface and groundwater resources¹⁴. Its concentrated character is also hoped to reduce potential effects on larger areas across the Region that are sensitive on account of ecology, scenery and cultural heritage. It also has the potential to contribute most to the establishment of localized patterns of sustainable mobility – with attendant benefits through the avoidance of noise, air pollution and climate change effects.

However there are significant environmental challenges involved in implementing this scenario. The principle one is the likely limiting factors of the assimilative capacity of the receiving waters for the treated effluents of Tullamore and Mullingar. This is an issue that is intrinsic to these locations and arises as a direct consequence of decisions to locate population loadings into these sensitive areas. Additional care – in terms of design standards and financial allocations to address environmental challenges – will be required because conventionally treated loadings have the potential to exceed the natural capacity of the available receiving waters. While the Shannon has significant hydraulic assimilative capacity to receive discharges from Athlone and its environs – the sensitivity of the river as an ecological resource may limit the bio-chemical character of discharges and associated risks – particularly from economic activities and industry.

These locations also contain significant concentrations of other sensitivities – groundwater and ecological - within their immediate environs – suggesting that the future growth and servicing of these areas will continue to give rise to environmental challenges involving increased costs [environmental and financial].

This scenario would lead to an increased centralisation of that part of population in Region who are involved in land management thereby resulting in a loss of existing rural management practices and a discontinuation of long established managed landscapes and the flora and fauna that they contain¹⁵.

This scenario's concentration of population away from the main eastern population centre of gravity will contribute to increasing levels of national and interregional vehicular movement by private and goods vehicles.

4.3.3 Scenario 2: *Balanced Development of the Gateway and its Wider Region*

This scenario gives rise to similar risks from concentrating growth into settlements that are situated on receiving waters with limited assimilative capacity. However the slower population growth of each main settlement centre is likely to mean a delay in exceeding the assimilative capacity constraint imposed by sensitive rivers.

This scenario's more extensive spatial distribution will increase the potential risk of pollution to sensitive ground and surface waters caused by more dispersed development. It also has the potential to give rise to more extensive threats to ecology¹⁶, scenery¹⁷ and cultural heritage¹⁸ than Scenario 1 if there is ineffective development management in rural areas.

¹³ Footnotes like this are used in this section in order to identify instances where interactions between the relevant Scenario and the relevant SEOs occur. The nature of these interactions is identified on Table 4.2.

¹⁴ SEOs W1, W2, M1, M2 & HH1

¹⁵ SEO B3

¹⁶ SEOs B1 & B2

¹⁷ SEO L1

¹⁸ SEOs CH1 & CH2

This scenario has the potential to contribute to the establishment of localized patterns of sustainable mobility – with attendant benefits through the avoidance of noise, air pollution and climate change effects – though it's concentration of population away from the main eastern population centre of gravity will contribute to increasing levels of national and interregional vehicular movement by private and goods vehicles¹⁹.

These locations also contain significant concentrations of other sensitivities – groundwater²⁰ and ecological²¹ - within their immediate environs – suggesting that the future growth and servicing²² of these areas will continue to give rise to environmental challenges²³ involving increased costs [environmental and financial].

This scenario would be likely to contribute to the sustenance of both the Region's population which are involved in land management and existing rural management practices thereby contributing towards a continuation of long established managed landscapes and the flora and fauna that they contain²⁴.

4.3.4 Scenario 3: *Continuation of Historical Development Trends*

This scenario also carries the risks of increased dispersal of potential environmental degradation²⁵ if there is weak development management – especially in the more sensitive areas identified in Figure 3.1.

Effects on receiving waters²⁶ will be less in this scenario however there would be a need to manage discharges, water supply and groundwater abstractions so that adverse effects do not occur - particularly on the Barrow River System²⁷.

Concentration of development and population in the eastern and south-eastern part of the Region is also likely to impinge upon fewer areas of habitat²⁸, landscape²⁹ or water-based³⁰ sensitivities.

This scenario's concentrated eastern concentration of population growth will produce less additional national and interregional vehicular movement by private and goods vehicles and such increases as will occur are more likely to use capacity in existing and emerging installed infrastructure capacity³¹.

This scenario would be likely to contribute to the sustenance of both the Region's population which are involved in land management and existing rural management practices thereby contributing towards a continuation of long established managed landscapes and the flora and fauna that they contain³².

4.3.5 Evaluation against SEOs

The table overleaf provides an evaluation of each of the alternative development scenarios for the Draft RPGs against the Strategic Environmental Objectives (SEOs).

¹⁹ SEOs C1 & C2

²⁰ SEO W2

²¹ SEOs B1 & B2

²² SEO M1 & M2

²³ SEOs W1, W2, M1, M2 & HH1

²⁴ SEO B3

²⁵ SEOs B1, B2, CH1, CH2, L1, W1, W2, M1, M2 & HH1

²⁶ SEOs W1, W2, M1, M2 & HH1

²⁷ SEO W1

²⁸ SEOs B1 & B2

²⁹ SEO L1

³⁰ SEOs W1 & W2

³¹ SEOs C1 & C2

³² SEO B3

Table 4.2 Evaluation of Alternative Development Scenarios against SEOs

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs - unlikely to be mitigated	Potential Conflict with status of SEOs - would be mitigated	Uncertain interaction with status of SEOs	Neutral interaction with status of SEOs	No Likely interaction with status of SEOs
Scenario 1: <i>Exclusively Gateway Focused Development</i>	C1 C2 (by concentrating development within the Gateway towns; localised patterns of sustainable mobility) B1 B2 CH1 CH2 L1 (by reducing effects on larger areas across the Region)	W1 M1 (residual loadings to exceed natural capacity of receiving waters at certain towns) B3 (loss of population involved in land management; loss of existing rural management practices)	B1 B2 (ecological sensitivities within the immediate environs and downstream of Gateway towns) W2 M2 HH1 S1 (sensitive groundwaters within the immediate environs of Gateway towns; soils) CH1 CH2 L1 (localised conflicts) W3 (need for further consideration of flooding issues, especially in Athlone and Mullingar) C1 C2 (increasing levels of national and interregional vehicular movement) W1 M1 (residual loadings to exceed natural capacity of receiving waters at certain towns)			
Scenario 2: <i>Balanced Development of the Gateway and its Wider Region</i>	C1 C2 (localised patterns of sustainable mobility, to a lesser extent than Scenario 1) B3 (sustenance of population involved in land management; sustenance of existing rural management practices)		B1 B2 (ecological sensitivities within the immediate environs and downstream of certain designated towns) B1 B2 CH1 CH2 L1 (mitigation dependent on effective development management in rural areas) W2 M2 HH1 S1 (dispersed development increases risk of pollution of sensitive groundwaters within Offaly and Laois as well as within localised areas in Longford and Westmeath; soils) CH1 CH2 L1 (localised conflicts) W3 (need for further consideration of flooding issues, especially in Athlone, Mullingar, Portlaoise and other designated settlements) C1 C2 (increasing levels of national and interregional vehicular movement) W1 M1 (residual loadings to exceed natural capacity of receiving waters at certain towns, although at a slower rate than would be the case with Scenario 1)			
Scenario 3: <i>Continuation of Historical Development Trends</i>	B1 B2 CH1 CH2 L1 (by reducing effects on most sensitive areas within the Region) W2 M2 HH1 (by directing development towards waters with greater assimilative capacity) C1 C2 (less additional national and interregional vehicular movement) B3 (sustenance of population involved in land management; sustenance of existing rural management practices)		B1 B2 CH1 CH2 L1 (localised conflicts - conflicts elevated if weak development management) W3 (need for further consideration of flooding issues, especially in the Region's eastern settlements) W1 W2 M1 M2 HH1 S1 (need to concentrate development and provide infrastructure in order to mitigate any adverse effects) W1 W2 (potential groundwater abstractions, especially in east Laois and parts of Offaly; effects on Barrow River System potentially an issue) W1 M1 (residual loadings to exceed natural capacity of receiving waters at certain towns, although at a slower rate than would be the case with Scenarios 1 or 2)			

4.3.6 The Selected Alternative Development Scenario

The Alternatives that were examined were produced and evaluated at an earlier - more embryonic - stage to facilitate the evaluation and selection of Draft RPGs for the Midland Region - having regard to both environmental and planning effects. The environmental effects are identified in the preceding section; the planning effects are identified in the Guidelines and in the Environmental Report. After having regard to these effects, the Alternative Scenario that was selected for the Draft RPGs is Scenario 2: Balanced Development of the Gateway and its Wider Region.

4.3.7 Evaluation of RPG Provisions prepared to realise the Selected Alternative

The environmental report evaluates the policies and objectives which have been prepared to realise Scenario 2 (the selected Scenario). Some of these provisions are likely to have a range of beneficial effects with regard to the protection of the environment while some are likely to have a range of potential adverse effects which will be mitigated by other provisions within the RPGs (including the measures integrated into the Guidelines as part of the SEA/Draft RPGs preparation process). Some provisions are likely to have a range of both beneficial effects and potential adverse effects which will be mitigated by other provisions within the RPGs (including the measures integrated into the Guidelines as part of the SEA/Draft RPGs preparation process).

Section 5 of this report includes a table summarising both the likely significant effects of implementing the policies and objectives of the Guidelines and the measures which have been integrated into the draft Guidelines in order to mitigate these effects.

Section 5 Mitigation and Monitoring Measures

5.1 Mitigation

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

Mitigation measures have been incorporated into the draft Plan through the early consideration of environmental sensitivities, through the selection of the Structured Alternative Scenario for the draft Plan and through objectives for the following topics:

- Biodiversity and Flora and Fauna
- Water Protection
- Water Services
- Waste Management
- Quarries
- Cultural Heritage
- Landscape
- Air & Noise
- Energy and Greenhouse Gas Emissions
- Habitats Directive Notes
- Amendment of Priority Action
- Amendment of Objective

Overleaf is a summary table outlining how likely significant effects (if unmitigated) are linked to relevant mitigation measures which have been integrated into the Guidelines.

5.2 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 Plan. 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 Plan is achieving its environmental objectives and targets - measures which the Plan 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 Plan will be prepared within two years of the making of the Plan. The Midland Regional Authority is 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.

Monitoring is proposed under the following headings: biodiversity and flora and fauna, population and human health, soil, water, air and climatic factors, material assets, cultural heritage and the landscape.

Likely Significant Effect, if unmitigated	Mitigation Measure Reference(s) from RPGs	Primary Indicator(s) for Monitoring
Loss of biodiversity with regard to Natura 2000 Sites	Chapter 6: Environment and Amenity Strategy - Policies 13, 14, 15, 16 and 17 Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 28	Indicator B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive
Loss of biodiversity with regard to ecological connectivity and stepping stones	Chapter 6: Environment and Amenity Strategy - Policies 13, 14, 15, 16 and 17 Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 28	Indicator B2: Percentage loss of functional connectivity to regionally important macro-corridors and contiguous areas of habitat without remediation as a result of implementation of the RPGs – as evidenced from a resurvey of CORINE mapping
Loss of rural management practices	Chapter 6: Environment and Amenity Strategy - Policy 1	Indicator B3: Population of the Region involved in land management
Spatially concentrated deterioration in human health arising from exposure to incompatible land uses	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28 Chapter 6: Environment and Amenity Strategy - Policy 3, 18	Indicator HH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors as identified by the Health Service Executive and Environmental Protection Agency.
Pollution and/or contamination of soils.	Chapter 5: Transport and Infrastructure Strategy: Policies 24, 25, 26, 27, 28, 33	Indicator S1: Number of instances of pollution and/or contamination of soil
Adverse impacts upon the quality of rivers and lakes	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28	Indicator 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)
Adverse impacts upon the quality of bathing waters	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 28	Indicator W1iii: Mandatory and Guide values as set by Directive 76/160/EEC Or; Poor, Sufficient, Good and Excellent classifications as set by Directive 2006/7/EC
Adverse impacts upon ground water quality	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28	Indicator W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
Flooding	Chapter 6: Environment and Amenity Strategy - Policies 20-23 and Objective E3	Indicator W3: Percentage of reviewed subsidiary land use plans for which a screening exercise is undertaken in order to ascertain whether a detailed Flood Risk Assessment is required

Likely Significant Effect, if unmitigated	Mitigation Measure Reference(s) from RPGs	Primary Indicator(s) for Monitoring
Increases in greenhouse gas emissions and increases in car dependency	Chapter 5: Transport and Infrastructure Strategy: Policies 34, 35, 36	Indicator C1i: Percentage of population within the Region travelling to work or school by public transport or non-mechanical means Indicator C1ii: Average distance travelled to work or school by the population of the Region
Inadequate waste water treatment for new populations	Chapter 5: Transport and Infrastructure Strategy: Policies 20, 21, 22, 23, 24, 28	Indicator M1: Preparation of Water Services Strategic Plan(s) - in compliance with the Water Services Act - for the functional area of the Authority
Inadequate drinking water supply for new populations	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28 Chapter 6: Environment and Amenity Strategy - Policy 3	Indicator M2i: Preparation of Water Services Strategic Plan(s) - in compliance with the Water Services Act - for the functional area of the Authority
Reduction in water quality which would present a potential danger to human health	Chapter 5: Transport and Infrastructure Strategy: Policies 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 28 Chapter 6: Environment and Amenity Strategy - Policy 3	Indicator M2ii: 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
Effects on entries to the Record of Monuments and Places	Chapter 6: Environment and Amenity Strategy - Policy 7	Indicator CH1: Number of unauthorised developments occurring which result in full or partial loss to entries to the Record of Monuments and Places and/or their context where relevant
Effects on entries to the Records of Protected Structures and Architectural Conservation Areas	Chapter 6: Environment and Amenity Strategy - Policy 10, 11 and 12	Indicator CH2i: Number of unauthorised developments occurring which result in physical loss of entries to the Records of Protected Structures and/or their context within the surrounding landscape where relevant Indicator CH2ii: Number of additions to the Records of Protected Structures and the number of additional ACAs
Visual impacts to sensitive landscapes and designated scenic views	Chapter 6: Environment and Amenity Strategy - Policy 1	L1: Implementation of landscape management using a coordinated Regional approach and preparation of a Regional Landscape Character Assessment and Strategy

Table 5.1 SEA Summary Table: Likely Significant Effects and Mitigation Measures