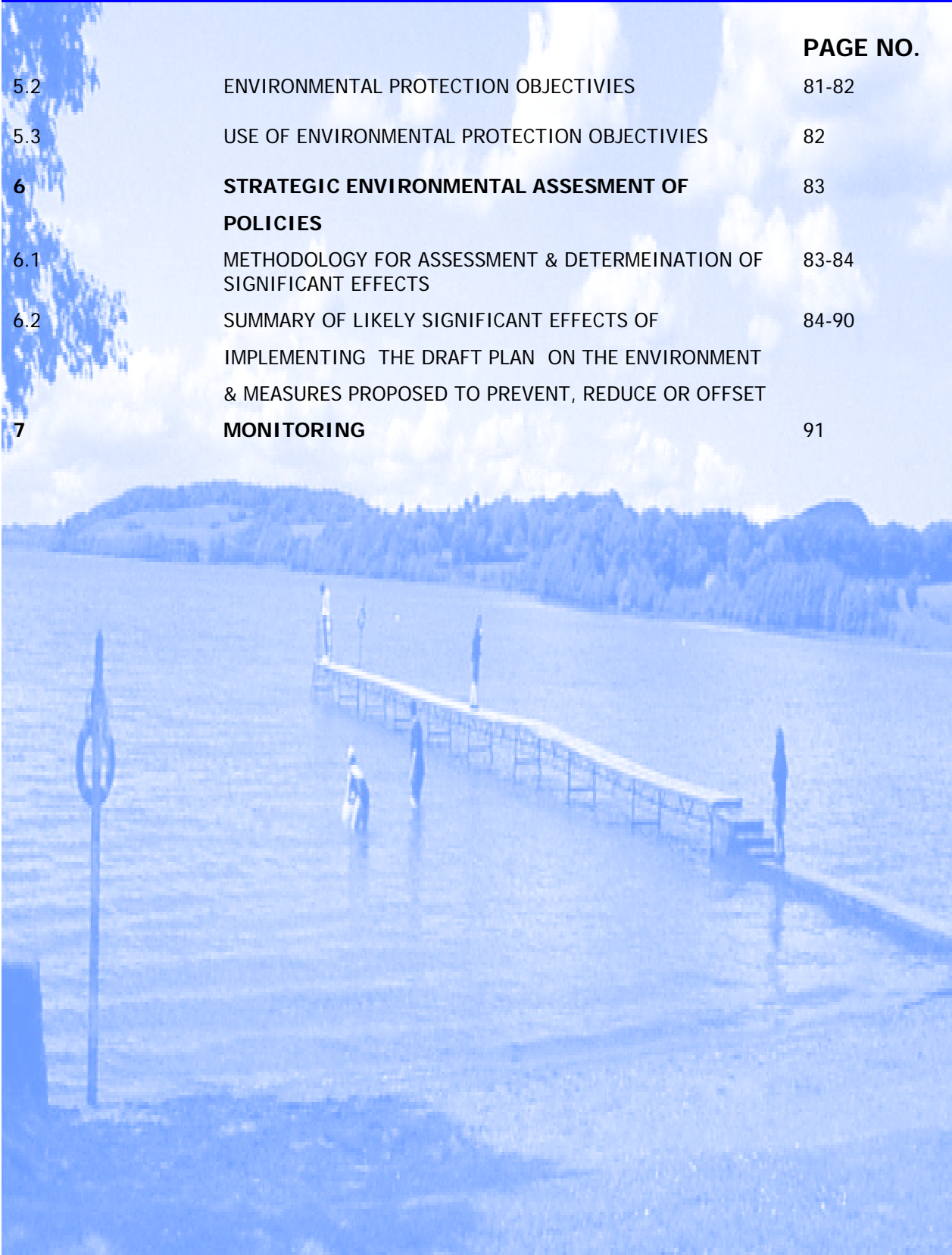


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**STRATEGIC ENVIRONMENTAL ASSESSMENT**

**ENVIRONMENTAL REPORT**

**FOR**

**WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014**



# **1 NON-TECHNICAL SUMMARY**

## **1.1 INTRODUCTION**

Strategic Environmental Assessment (SEA) is a formal process that is being carried out in parallel with the County Development Plan review process. It is a valuable tool that has influenced decision-making at each stage in the CDP review process; to improve the environmental sustainability of the new Plan and to raise awareness of the potential environmental consequences of its implementation so that these consequences may be mitigated or avoided altogether. It also gives the public and other interested parties an opportunity to comment and to be kept informed on decisions that may impact on the environment and how they were made.

As part of the SEA process it is necessary to consult with various individuals and agencies to ensure that the process is meaningful. In line with the Plan review processes, the public have been consulted in order to help ascertain the significant environmental issues relevant to Westmeath. In accordance with the legislation, a 'scoping' exercise has also been carried out to determine the range of environmental issues and level of detail to be contained in the Environmental Report. This involved consultation with the relevant Environmental Authorities:

- The Environmental Protection Agency
- The Department of the Environment, Heritage and Local Government
- The Department of Communications, Marine and Natural Resources

A cross-departmental SEA Steering Group was also used in carrying out the SEA process, which provided advice and expertise and assisted in the determination of significance of effects and mitigation and monitoring measures.

The main output of SEA is the Environmental Report, which outlines the findings of the assessment process. This is the Environmental Report for the Westmeath County Development Plan 2008-2014 and has been prepared in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004. This report should be read in conjunction with the County Development Plan.

## **1.2 CONTENTS AND MAIN OBJECTIVES OF THE PLAN**

A comprehensive range of strategic development goals for the County are set out in the Plan, which aim to:

- Ensure that everyone has equity in the development of the County and the opportunities to benefit from its economic, social, cultural and environmental progress.
- Recognise the largely rural character of the County.
- Ensure that everyone has the opportunity of obtaining affordable housing, can enjoy safe and accessible environments, have access to jobs, education and training, community services and recreational facilities, arts and culture.
- Ensure that quality underpins all forms of development, and 'design-led' solutions are applied. Develop and maintain a sense of place and local distinctiveness in established and newly developed areas. That the vitality and character of established town and village centres are maintained. Ensure the cohesive and coherent development of existing and proposed settlements.
- Protect, maintain and enhance the quality of the natural environment, protect the unique character of Westmeath landscapes and conserve its open spaces and visual amenity.

- Recognise that Westmeath's archaeological, natural and built heritages are important elements in the long-term economic development of the county and to promote their conservation and enhancement, public access and enjoyment.
- Revitalise run-down or underdeveloped parts of the County and ensure that redevelopment contributes to meeting the needs of the existing community, not exclude or isolate them.
- Realise the opportunities which Westmeath's location open up as a regional and national centre of trade, business and tourism; to promote employment growth and economic activity; to widen and diversify the economic base; and to channel growth towards the regeneration of less developed areas of the County.
- To work in partnership with Athlone Town council and Offaly Co. co. to ensure that the linked Gateway, Athlone-Tullamore-Mullingar, will achieve the critical mass of population, services and infrastructure, and complementary strengths and attractions to enable the centres to fulfil their combined role as centres for growth, in accordance with National and Regional strategies.
- To promote tourism, diversify its base as a development agent in the regeneration of the County's economy in ways that do not have an adverse effect upon local communities or the environment, and ensure that the County becomes a "go see" as opposed to a "pass through" location.
- Contribute to a sustainable environment by encouraging the development of buildings of all types that are environmentally efficient to build and run, and which contribute to the "greening" of the County according to the principles of Local Agenda 21.

The Westmeath County Development Plan and accompanying Environmental Report are situated within a hierarchy of strategic actions, policy and guidance; higher-level strategic actions constrain the County Development Plan while the County Development Plan in turn, constrains lower strategic actions. As required in the legislation, the County Development Plan shall, so far as is practical, be consistent with national and regional plans, policies and strategies, and any guidelines issued by the Minister of the Environment Heritage and Local Government, which relate to the proper planning and sustainable development of the area covered by the Plan.

### **1.3 CURRENT STATE OF THE ENVIRONMENT**

#### **1.3.1 Landscape and Amenity**

Westmeath has a variety of landscapes but the most prominent one can be described as a "undulating pattern of low hills, patches of woodland and bog, with many lakes nestling in shallow valleys". In general, the areas of greatest scenic merit, such as Westmeath's lakelands are also the areas of greatest nature value and are also the areas that attract visitors in numbers. Specific places from which views of exceptional importance may be enjoyed, have been identified in the County Development Plan for protection; and these include views across Lough Ree, at Uisneach, from Knockastia, Coolatore, around each of the lakeland areas and from the N6 towards the Eskers near Tyrellspass. Having regard to their amenity and recreational potential, a number of areas are designated as Areas of High Amenity, which are afforded a degree of protection from development that may harm their amenity value. The Landscape Character Assessment which is part of the Plan will assist in landscape protection.

#### **1.3.2 Population and Human Health**

The level of environmental public health protection is high, especially since the threat from infectious diseases has largely diminished due to successful immunisation programmes and improved diet, housing and general living conditions. Ireland's temperate climate is a contributory factor in reducing risks to public health, especially in terms of infectious diseases and sun exposure.

Human Health issues for Westmeath are therefore primarily concerned with the quality of drinking water and air quality and also to the quality of life of Westmeath's citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity in the County.

Rapid population growth in recent years has resulted in increasing pressure for housing and services, such as wastewater treatment, social and educational facilities and transport facilities. Pressure for development in rural areas is increasing, placing added pressure on landscape and water resources, in addition to increasing unsustainable transport trends with increased reliance on the private car.

### **1.3.3 Water Resources**

The EU Water framework Directive came into force in December 2000 and aims to achieve at least 'good status' for all waters by 2015 and will specify water quality targets to be implemented. The catchment-based approach to water quality is enshrined in the Directive and Member States are required to develop River Basin District Management Plans by 2009.

Pressures on water quality are predominantly due to agricultural activity, development in areas where groundwater is vulnerable, too many or poorly sited and maintained septic tank systems and industrial development causing pollution.

Lough Owel is the main public water supply for the County and as such is considered vulnerable. Westmeath County Council are also obliged to supply water to the canal from this source. Lough Ennell has been vulnerable due to wastewater capacity issues. Lough Lene is in good condition and due to its importance as a water supply source and as a bathing water it is considered important to maintain its quality. Lough Ree is significantly at risk of pollution as is Lough Sheelin and Lough Derravarragh.

River channels in the Boyne Catchment are salmonoid and as such their quality needs to be preserved. The River Brosna has been identified as one that is at risk of deterioration, along with parts of the river Inny, the Yellow River, the Dungolman and the Shannon River.

Water supply infrastructure and its capacity and condition is an issue; it is estimated that currently there is a 40% level of water leakage. This issue is being addressed through checking for leaks and the replacement of infrastructure.

Wastewater infrastructure and its capacity is also an issue that is impacting on water quality. This problem will be exacerbated if strategic settlement planning is not reflected in appropriate capacity. Capacity problems exist due to storm water runoff into the town systems. There is a need to upgrade drainage systems in some areas. Small-scale settlement policies will result in pressures on the provision of wastewater services. Growth of Mullingar is required by national policy but the issue of wastewater treatment capacity to support this growth must be addressed on an ongoing basis.

Groundwater is an important resource; for drinking water and also due to the fact that it feeds a significant portion of surface water bodies so its quality affects that of surface water bodies. Areas where groundwater is extremely or highly vulnerable have been highlighted through the recently available interim data from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County.

A number of measures are in place to prevent and control pollution of ground waters, such as agricultural bye-laws, and enforcement under the Water Pollution Act. Measures will be strengthened and increased with the adoption of River Basin District Management Plans under the Water Framework Directive in 2008.

The use of jet-skis have resulted in pressure in terms of water pollution, impact on fish life, noise disturbance etc. and although bye-laws have been adopted to prohibit their use, these do not apply to Lough Ree, potentially placing increased pressure on this lake that is already at risk from pollution sources.

Loughs Ennell, Owel, and Sheelin are important and renowned wild brown trout fisheries that attracts tourist anglers from both within and outside Ireland. Lough Derravarragh was managed as a brown trout fishery up to the 1970's. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Lough Sheelin is known for its duckfly and mayfly hatch, whilst Lough Ennell produced the Irish record lough trout and is noted for its game angling. Loughs Owel, Derraghvarragh and Sheelin also support stocks of course fish. Fish need unpolluted water and abundant food supplies in a habitat that provides spawning areas, shelter and freedom of movement and it is important that these needs are not affected by development.

#### **1.3.4 Air Quality and Climate**

Overall air quality in the region of Westmeath is within EU limits and periodic monitoring is carried out by the Environmental Protection Agency. However in urban areas in particular, levels of air pollution occasionally exceeds EU limits and this is of concern, due mainly to increased car traffic.

The effect of global warming is increasing the incidence and severity of flooding and it is therefore increasingly important to take account of flood risk in spatial planning.

#### **1.3.5 Geology, Soil and Material assets**

Material assets include surface and groundwater resources, esker systems with geodiversity and biodiversity value, bogs and fens, watercourses and other features of amenity value, transportation and other physical infrastructure, social and community facilities and services, our scenic landscape and features of natural and cultural heritage, such as buildings and sites of historical, architectural or archaeological value and habitats and species of note. These assets are valuable to local communities and to visitors alike and it is essential that we ensure that they are managed in a sustainable manner so that their value is not lost. The Westmeath esker systems have been identified in particular as valuable material assets from their geodiversity, biodiversity and educational value.

#### **1.3.6 Biodiversity, Flora and Fauna**

Biodiversity can be defined as the variability among living organisms including terrestrial and aquatic ecosystems. The loss of biodiversity reduces an ecosystem's ability to recover from natural or human impacts. Biodiversity can include diversity within species, between species and of ecosystems and is often discussed under the headings habitats and species.

In Ireland there are a number of categories of protected areas for the conservation and protection of flora and fauna. Sites of International Importance include; candidate Special Areas of Conservation (cSACs) protected under the EU Habitats Directive (92/43/EEC), established for the conservation of natural and semi-natural habitats and species of flora and fauna and; Special Protection Areas (SPAs) for the protection of birds established under the Birds Directive of the EU in 1979. Sites of national importance are proposed Natural Heritage Areas (pNHAs) and are designated under the Wildlife (Amendment) Act 2000.

In addition to the protected sites referred to biodiversity also includes species, habitats and ecosystems, which are not designated.

The eskers in the area of County Westmeath provide wonderful and unique scientific examples, which offer exceptional aesthetic, recreational and educational value. Further from this, the sites are important geologically, archaeologically, historically, culturally and ecologically. They are therefore considered highly sensitive to injurious forms of development.

Ireland is the most important country in Europe for peatlands and county Westmeath has 15 peatlands designated for conservation. Peatlands of natural heritage and habitat value include raised bogs and fens. Peat extraction and associated drainage has been the biggest cause of loss of peatland habitat. Industrial peat harvesting is the biggest factor. Other threats include afforestation and illegal dumping.

The Shannon Callows, on the floodplain of the River Shannon south of Athlone town, is a unique wetland resource in the Irish Midlands of international importance and has been afforded EU Designations in this regard. This large expanse of shallow water welcomes thousands of wintering waterfowl and waders every year, including Whooper Swan, Bewick's Swan, Wigeon, Golden Plover, Lapwing and Black-tailed Godwit.

#### **1.3.7 Cultural Heritage**

Westmeath has a rich and diverse archaeological heritage, the Hill of Uisneach for example is identified as one of the most importance archaeological sites and is of national importance. The richness of archaeological and historical remains, together with the attractive landscape can also be found at Fore Village.



The Built Heritage of Westmeath is special and unique, and includes not only works of great artistic and structural achievements but also everyday items, which have been produced by skilled craftsmen of bygone days. Many structures and groups of structures of value throughout the County have been afforded protection through inclusion on the Record of Protected Structures or in Architectural Conservation Areas. The recently published National Inventory of Architectural Heritage will be an important resource for listing further structures for protection.

## **1.4 EXISTING ENVIRONMENTAL ISSUES**

In summary, environmental pressures on the County relate to surface water quality and ground water quality and the impacts of agriculture, industry, on-site wastewater treatment systems and public wastewater treatment, capacity of wastewater treatment provision for increasing development on these resources; landscape impacts from development; tourism related development and tourist activity; biodiversity and habitat protection; flood risk, increased use of the private car impacting on air quality and quality of life.

## **1.5 CONSIDERATION OF ALTERNATIVE STRATEGIES**

It is required in the legislation that the Environmental Report must consider reasonable alternative strategies that the Development Plan could follow before deciding on the preferred option. Following the consideration of a variety of settlement options and policy directions a preferred strategy was decided upon to be taken by the Plan as the most environmentally sustainable.

Details of the consideration of alternative strategies are given in more detail in the main body of the Environmental Report.

## **1.6 ENVIRONMENTAL PROTECTION OBJECTIVES**

The Environmental Protection Objectives provide a standard against which the goals, policies and objectives of the County Development Plan can be measured in order to highlight those with the potential for environmental impact. They are as follows:

### **1.6.1 Biodiversity, Flora and Fauna**

- B1: Conserve and promote the diversity of habitats and species
- B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks

### **1.6.2 Population and Human Health**

- P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution

### **1.6.3 Water Resources**

- W1: Promote water conservation and sustainable water use based on long-term projections of available water resources
- W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation
- W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters



#### **1.6.4 Soil and Material Assets**

- S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands
- S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill
- S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, water courses and all other physical and social infrastructure
- S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods

#### **1.6.5 Cultural Heritage and Landscape**

- C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate
- C2: Conserve and enhance valued natural and historic landscape features
- C3: Enhance landscape and townscape quality and minimise negative visual impacts from development
- C4: Protect and enhance the quality, character and features of waterways
- C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features

#### **1.6.6 Air and Climatic Factors**

- A1: Reduce the need to travel by private car
- A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change
- A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms
- A4: Reduce all forms of air pollution and promote tree planting where appropriate

### **1.7 LIKELY SIGNIFICANT EFFECTS ON THE ENVIRONMENT OF IMPLEMENTING THE COUNTY DEVELOPMENT PLAN AND MITIGATION MEASURES**

The full matrix and assessment of policies against environmental objectives is included in Appendix One of the Environmental Report.

Since the SEA process was intended to inform policy as it is created, the Plan policies were formulated in accordance with the findings of the SEA process and as a result they are for the most part already environmentally sustainable.

In summary, the main significant issues that were raised and offsetting or mitigation measures to deal with these issues are as follows:

#### **1.7.1 Biodiversity**

##### **Service Areas for N6**

Policy 'to co-operate with the National Roads Authority to identify the need for service areas for motorists along the route of the N6 dual carriageway and to implement proposals for provision'. Depending on the location of the service areas this could result in a significant impact to biodiversity, flora and fauna and potentially to habitats and species, such as intact bog to the east of Athlone, hedgerows and other habitats.

To offset this potentially significant impact, a policy was included to ensure that any such development should not damage habitats or species of value and should be developed with minimal

impact to biodiversity, flora and fauna. Major infrastructural and motorway-related developments should reflect the local biodiversity value within which they are sited, using screening and planting with native species of local provenance and design should respect the landscape character.

### **1.7.2 Air Quality**

#### **Settlement Strategy**

Settlement strategy Tiers 3 and 4 in particular will allow for population growth in areas with a limited employment base and minimal provision for public transport use. This will increase the need to travel by private car, conflicting with Strategic Environmental Objective A1.

In addition, policies to support rural enterprise and rural-based tourism industries will result in an increased need to travel to such areas without the option of sustainable modes of transport.

An objective was included to explore options to increase provision for public transport services in rural areas and to support developments of the rural bus initiative and any other sustainable transport initiatives.

#### **Development along National Routes**

"To restrict development accessing national routes in cooperation with the NRA" This policy restricts development with a direct access point onto a national route. This would not necessarily control development that would have an impact on the national route such as development at interchanges; permitting such development could affect the carrying capacity, safety and efficiency of the national road network and could result in backed up traffic and associated negative environmental implications of air pollution.

To mitigate against such affects the planning authority will manage development with strict accord to implementation of its retail strategy and settlement policies, which aim to prevent development at inappropriate locations.

#### **Zoning of excess land for residential use in Delvin and Clonmellon**

- Existing zoning in Delvin allows for a provision of an additional population of 2431 people, potentially bringing the population of this village to in excess of 2789 + people by 2014 if all this land were to be developed within the period of the plan.
- Existing zoning in Clonmellon allows for a provision of an additional population of 919 people, potentially bringing the population to in excess of 1610 + people by 2014.

Provision for this scale of population growth in such a short space of time without employment and public transport would potentially have a wide range of significant environmental effects, depending on the scale of development, such as negative impacts to air quality through increasing the need to travel by private car, population and human health due to unsustainable transport patterns encouraged, impacts to townscape quality with rapid change and to landscape and biodiversity with rapid development of greenfield lands.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur, it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that excess residentially zoned land in Delvin and Clonmellon should be de-zoned in the County Development Plan 2008-2014, to ensure the logical and sustainable development of these areas.

### **1.7.3 Water Quality**

#### **Wastewater Treatment Capacity Issues**

Population growth projected for Mullingar in particular, will place increasing pressure on the sewerage treatment systems and this, in turn would increase the vulnerability of Lough Ennell and the River Brosna to pollution. To address this situation a new Mullingar Sewerage Treatment Plant and 1st Phase of Network Improvement will be in place by the end of 2008.

## **Unserviced Settlements**

The 'Unserviced Settlement' policy aims to direct rural residential development in a sustainable pattern, concentrating development in designated centres, to sustain rural communities and rural facilities such as schools and shops and to cater for the demand for single site housing in a rural setting.

The proposed unserviced settlements are as follows:

- Athlone Area; Baylin, Castledaly, Toberclaive, Ballynahown,
- Coole Area; Streete, Crookedwood, Drumcree, Castletown-Finnea, Lismacaffrey, Archerstown
- Kilbeggan Area; Loughnavalley, Dysart, Moyvore, Mount Temple, Tang, Horseleap, Streamstown
- Mullingar Area; the Downs, Rathconrath, Taghman, Gainstown, Ballinea and Milltown

Interim data in relation to the vulnerability of groundwater to pollution in the county has recently become available from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County. This information shows areas in the county that are classed as 'extremely' or 'highly' vulnerable to groundwater pollution. Some of the proposed unserviced settlements are located within these vulnerable areas.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts are likely, based on most recent information available; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that the following settlements be removed from the unserviced settlement policy in the CDP:

- Settlements located in areas of 'extreme' groundwater vulnerability: Crookedwood, Taghmon, Tang, Loughnavalley and Mount Temple
- Settlements located in areas of 'high' groundwater vulnerability: Castletown-Finnea, Horseleap, Streamstown, and Baylin.

The reason for this recommendation is that locating a number of new houses in a vulnerable area for groundwaters, without water and wastewater treatment services and using on-site wastewater treatment systems instead, will have a cumulative effect of significantly increased risk of groundwater pollution and potential impacts to public health as a result.

## **Rural Housing Policy**

One-off rural housing raises a number of environmental concerns and if it is not 'rural generated'; necessary to sustain rural communities and economies, it can be considered unsustainable. These environmental concerns include:

- a) Where occupiers of rural housing are working, being educated or connecting with family in urban areas or elsewhere, extra trips are generated, resulting in a reliance on the private car and unsustainable transport patterns. The cumulative impact of such development will be the excessive emissions of greenhouse gases, which is contrary to our obligations under the Kyoto agreement.
- b) Individual rural houses that are poorly sited and screened or located in sensitive or exposed environments or landscapes will negatively impact on the quality of the area. Cumulatively a large volume of rural housing development over time, however sensitively sited will impact visually upon landscape and natural amenity.
- c) Single rural houses that rely on septic tank systems for on-site wastewater treatment can place surface and ground water resources under a significant risk of pollution and will be particularly harmful if located in areas of groundwater vulnerability.

The Sustainable Rural Housing Guidelines (2005) issued by the DoEHLG advise on the type of housing development that should be considered as rural generated; which should take account of the scope and extent of the housing needs to be considered in the area – whether beside a large town or more

removed from such a centre; the categories of persons the guidelines cite as comprising rural generated are those who are an intrinsic part of the rural community e.g., have lived for substantial periods of their lives in the area as members of the established rural community; or persons working full-time or part-time in the rural area e.g., in farming or natural resource related occupations or teaching in a rural school.

The Development Plan policy allows for persons in the following categories:

1. Persons who are actively engaged in agriculture, horticulture, forestry, bloodstock and peat industry.
2. Members of farm families seeking to build on the family farm.
3. Landowners and members of landowners' families (landowner for this purpose being defined as persons who owned the land in question at the date of adoption of the draft County Development Plan 2000).
4. Persons employed locally whose employment would provide a service to the Local Community.
5. Persons who have close personal, family or economic ties within the area, including returning emigrants.

Category five extends the categories beyond the Guidelines range by allowing for persons who have undefined 'close personal, family or economic ties' within the rural area. While, the Guidelines represent policy taken at a higher level and therefore are more appropriately dealt with at that higher level, the extension of the categories of qualifying persons beyond the guidelines must be considered in this SEA.

Since the 'ties' and what constitutes 'close' within the rural area remain undefined, this category could be loosely applied and rural housing that is not necessary to sustain rural communities and economies, which is therefore unsustainable, may be permissible. This will exacerbate environmental impacts in relation to the cumulative effects of rural housing, making such impacts significant.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that category five of the proposed policy be amended to:

5. "Other persons who can demonstrate that they are an intrinsic part of the rural community in accordance with the Sustainable Rural Housing Guidelines, 2005"

## **1.8 MONITORING PROPOSALS**

Measures were proposed as part of this SEA process to monitor the effects on the environment of implementing the County Development Plan and these are presented in the Environmental Report in terms of the achievement of the environmental protection objectives and the impact on the environmental factors that the SEA legislation requires to be considered. Measurable indicators are included and targets are set.

Monitoring for SEA will be carried out as part of the overall monitoring of implementation of the County Development Plan, as required two years after adoption of the Plan.

## **2 INTRODUCTION**

### **2.1 BACKGROUND**

Article 1 of the European SEA Directive (2001/42/EC) states; "the objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development...." This Directive was adopted into Irish Legislation on the 21st of July 2004 by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, S.I. No. 435 of 2004 and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004). Certain plans and programmes prepared by statutory bodies and which are likely to have a significant impact on the environment now require an SEA to be carried out, where the preparation of such plans and programmes is started after that date.

The two-year review process of the Westmeath County Development Plan commenced on the 25th March 2006. As part of and in conjunction with the timeframes of the Development Plan Review processes, a Strategic Environmental Assessment of the likely significant effects of implementing each new Development Plan must be carried out, in accordance with above legislation.

### **2.2 STRATEGIC ENVIRONMENTAL ASSESSMENT**

Strategic Environmental Assessment (SEA) is defined as 'the formal, systematic and comprehensive process of evaluating the effects of a proposed policy, plan or programme or its alternatives, including the written report on the findings of that evaluation, and using the findings in publicly accountable decision making'.

SEA is a process for evaluating at the earliest appropriate stage, the environmental quality, and potential consequences, of policies, plans or programmes and to ensure that any potential consequences are assessed during their preparation and before they are adopted. Its overall purpose is to contribute to sustainable development. SEA is intended to provide a framework for influencing decision-making at an early stage; to improve the environmental sustainability of the new Plan and to raise awareness of the potential environmental consequences of its implementation so that these consequences may be mitigated or avoided altogether. It also gives the public and other interested parties an opportunity to comment and to be kept informed on decisions that may impact on the environment and how they were made.

The SEA process includes the following outputs:

- An Environmental Report (a report containing the findings of the SEA) on the likely significant effects of implementing the Draft Development Plan.
- Scoping Report – stating how the scoping responses of the environmental authorities were taken account of in preparing the Environmental Report
- An SEA Statement (identifying how environmental considerations and consultation have been integrated into the County Development Plan 2008-2014).

This is the Environmental Report for the Westmeath County Development Plan 2008-2014 and has been carried out with in accordance with Schedule 2B of S.I. 436 of 2004, which sets out the information that is required to be included in SEA Environmental Reports. This report should be read in conjunction with the County Development Plan.

## **2.3 THE CONTENTS AND MAIN OBJECTIVES OF THE COUNTY DEVELOPMENT PLAN**

### **2.3.1 Contents and Main Objectives of Plan**

A comprehensive range of strategic development goals for the County are set out in the Plan, which aim to:

- Ensure that everyone has equity in the development of the County and the opportunities to benefit from its economic, social, cultural and environmental progress.
- Recognise the largely rural character of the County.
- Ensure that everyone has the opportunity of obtaining affordable housing, can enjoy safe and accessible environments, have access to jobs, education and training, community services and recreational facilities, arts and culture.
- Ensure that quality underpins all forms of development, and 'design-led' solutions are applied. Develop and maintain a sense of place and local distinctiveness in established and newly developed areas. That the vitality and character of established town and village centres are maintained. Ensure the cohesive and coherent development of existing and proposed settlements.
- Protect, maintain and enhance the quality of the natural environment, protect the unique character of Westmeath landscapes and conserve its open spaces and visual amenity.
- Recognise that Westmeath's archaeological, natural and built heritages are important elements in the long-term economic development of the county and to promote their conservation and enhancement, public access and enjoyment.
- Revitalise run-down or underdeveloped parts of the County and ensure that redevelopment contributes to meeting the needs of the existing community, not exclude or isolate them.
- Realise the opportunities which Westmeath's location open up as a regional and national centre of trade, business and tourism; to promote employment growth and economic activity; to widen and diversify the economic base; and to channel growth towards the regeneration of less developed areas of the County.
- To work in partnership with Athlone Town council and Offaly Co. co. to ensure that the linked Gateway, Athlone-Tullamore-Mullingar, will achieve the critical mass of population, services and infrastructure, and complementary strengths and attractions to enable the centres to fulfil their combined role as centres for growth, in accordance with National and Regional strategies.
- To promote tourism, diversify its base as a development agent in the regeneration of the County's economy in ways that do not have an adverse effect upon local communities or the environment, and ensure that the County becomes a "go see" as opposed to a "pass through" location.
- Contribute to a sustainable environment by encouraging the development of buildings of all types that are environmentally efficient to build and run, and which contribute to the "greening" of the County according to the principles of Local Agenda 21.

## **2.4 RELATIONSHIP OF THE PLAN WITH OTHER RELEVANT PLANS.**

### **2.4.1 Introduction - Hierarchy of Strategic Actions**

The Westmeath County Development Plan and accompanying Environmental Report are situated within a hierarchy of strategic actions, policy and guidance; higher-level strategic actions constrain the County Development Plan while the County Development Plan in turn, constrains lower strategic actions. In accordance with the SEA legislation in this regard, the environmental report includes the information that may reasonably be required taking into account a number of factors, one of which is "the extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment". In accordance

with this provision, potential environmental impacts that arise from the implementation of policies and objectives where dictated by higher-level policy, and cannot be assessed in this SEA.

Furthermore, certain objectives are more site-specific than strategic, such as those that seek to provide strategic infrastructure. Where such situations arise, they will undergo appropriate assessment for their impacts through a more appropriate appraisal, such as EIA or SEA of a lower-level Plan (Local Area Plan). The Planning Authority has a statutory obligation to carry out SEA screening of some Local Area Plans. Where deemed to be mandatory or necessary, the Planning Authority will engage in the SEA process in the course of reviewing/drafting policy for Local Area Plans.

As required in the legislation, the County Development Plan (and accompanying Environmental Report) shall, so far as is practical, be consistent with national and regional plans, policies and strategies, and any guidelines issued by the Minister of the Environment Heritage and Local Government, which relate to the proper planning and sustainable development of the area covered by the Plan. Ireland has ratified a range of International Agreements in relation to our environment; such Agreements place legal obligations on the State in relation to the conservation and management of designated heritage sites and species and the maintenance of prescribed standards of environmental quality. Relevant policy and guidance from regional, national and international levels are outlined in the following sections.

#### **2.4.2 Regional Policy and Guidance**

##### **Midland Regional Planning Guidelines, 2004**

This document has been prepared to implement the National Spatial Strategy in the Midlands region. This is to be achieved through 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, while ensuring a high quality living environment that is rich in heritage and landscape value. The RPGs also acknowledge the environmental advantages of the Midlands in creating better quality life and promoting economic growth.

##### **Midlands Waste Management Plan 2005-2010**

The Midlands Waste Management Plan sets out a programme for the provision of waste infrastructure for the region, based on the waste hierarchy of prevention, reuse, recycling and energy recovery ahead of landfill, utilizing principles such as the 'polluter pays' and 'proximity' principle.

#### **2.4.3 National Policy and Guidance**

##### **Sustainable Development: A Strategy for Ireland, 1997**

This aims for the development of the regions of Ireland to their full potential within a well-protected environment, without compromising the quality of that environment, and with responsibility towards present and future generations.

##### **Making Ireland's Development Sustainable, 2002**

The report examines the progress made in the ten years since the Rio de Janeiro Earth Summit. The main issues addressed are: eutrophication of inland waters; increases in the amounts of waste; the urban environment; the impacts of settlement patterns; the need to reduce emissions of greenhouse gases; and depletion of natural resources and threats to biodiversity.

##### **National Spatial Strategy, 2002**

In accordance with this 20-year strategy, which aims to achieve more balanced regional development, all development must have economic, social and environmental dimensions, to contribute to a better quality of life. The NSS highlights that environmental quality is a key ingredient in the potential of the Country as a whole, and that it must be carefully managed to avoid erosion of its potential.



### **National Climate Change Strategy, 2000**

This strategy sets out a ten-year framework for achieving the necessary reductions in greenhouse gas emissions to ensure that Ireland complies with the Kyoto Protocol. Local traffic management measures and significant investment in transport infrastructure are identified as measures that will help to limit emissions. Changes to the building regulations to reduce energy requirements are also proposed.

### **OPW Guidelines on Flood Risk, 2005**

The Office of Public Works has issued guidance for Planning Authorities on flood risk, which state, in terms of location, that development that is sensitive to the effects of flooding would generally not be permitted in flood - prone or marginal areas. The guidance also states that appropriately designed development, which is not sensitive to the effects of flooding, must not reduce the flood plain or otherwise restrict flow across floodplains. Development consisting of construction of embankments, wide bridge piers, or similar structures should not normally be permitted in or across flood plains or river channels.

The guidance states that development must incorporate the maximum provision to reduce the rate and quantity of runoff and developments must be set back from the edge of the watercourse to allow access for channel clearing/maintenance. In addition, developments must be constructed to meet specific minimum flood design standards and that flood impact assessment must accompany certain applications.

### **SR 6:1991**

Septic tank systems (Recommendation for Domestic Effluent Treatment and Disposal from Single Dwelling Houses), N.S.A.I. 1991 sets out standards for percolation tests, water table tests and minimum distances for a septic tank and percolation area from site boundaries, houses wells etc.

### **EPA Wastewater Treatment Manual, 2000**

Treatment Systems for Single Houses, EPA 2000. This document sets out more detailed site analysis and tests. It describes how unsuitable sites can be improved for effluent disposal and it sets out distance requirements for percolation areas and minimum site sizes which are less than SR6.

### **Local Government (Water Pollution) Acts, 1977 and 1990**

This Act and associated regulations set out quality standards for Phosphorus in surface waters, particularly rivers and lakes and makes other provisions for the protection of watercourses. The Phosphorus Regulations require that water quality be maintained or improved by reference to the baseline biological quality rating (rivers) or trophic status (lakes) assigned by the EPA. Section 4 of the 1977 Act – 'Licensing of trade and sewage effluents' and Section 16 – 'Licensing of discharges to sewers' give measures for controlling the level of pollutants entering water

### **Water Quality (Dangerous Substances) Regulations 2001.**

These Regulations give effect to the Dangerous Substances Directive 76/464/EC and the Water Framework Directive 2000/60/EC. They prescribe water quality standards and aim to ensure that, in relation to a substance present, where the existing condition of a water body does not meet a specific standard there shall be no disimprovement in the condition of the water body.

### **Air Pollution Act, 1987**

This Act defines air pollution and enables Local Authorities to require measures to be taken to prevent or limit pollution.

### **Noise Regulations 1994**

These regulations, relating to the 1992 EPA Act, simplify and strengthen the procedures for dealing with noise nuisance, and give Local Authorities power to take action when they consider that it is necessary to do so in order to prevent or limit noise.

### **Changing our Ways, 1998**

This policy statement on waste management is addressed chiefly to local authorities, and is intended to provide a national policy framework for the adoption and implementation by local authorities of strategic waste management plans under which national objectives and targets will be attained.

It outlines the Government's policy objectives in relation to waste management, and suggests some key issues and considerations that must be addressed in order to achieve these objectives. In particular, it focuses on the need to give clear and practical expression to the requirements of the waste hierarchy, by developing and pursuing integrated solutions, which combine progressive policies with a sustainable and cost effective waste infrastructure.

The policy was expanded in two related documents: Preventing and Recycling Waste: Delivering change (2002) and Taking Stock and moving forward (2004).

### **National Heritage Plan (2002)**

This is a five-year action plan, which set out the Government's strategy in relation to the conservation and management of our heritage over the period 2002 – 2007 as an important part of sustainable development. The Government Policy Statement on Heritage as contained in the Plan, states "it is an objective of Government to ensure the protection of our heritage and to promote its enjoyment by all. A key factor of the Plan is the enhanced role for local authorities in heritage awareness and management, to be given effect through the preparation and implementation of Local Heritage Plans.

### **Convention on Biological Diversity and the National Biodiversity Plan (2002)**

The National Biodiversity Plan 2002 was prepared in response to Article 6 of the Convention on Biological Diversity. This plan "pays special attention to the need for the integration of the conservation and sustainable use of biological diversity into all relevant sectors. The full and effective integration of biodiversity concerns into the development and implementation of other policies legislation and programmes is of crucial importance if the conservation and sustainable use of biodiversity is to be achieved".

### **Framework and Principles for the Protection of the Archaeological Heritage, 1999**

This document sets out for all concerned parties basic principles and approaches for the protection of the archaeological heritage.

### **Quarries and Ancillary Activities; Guidelines for Planning Authorities, 2004**

This provides guidance in mitigating and controlling land use and environmental issues through the planning system with regard to the operation of quarries.

### **Architectural Heritage Protection Guidelines, 2004**

These guidelines aim to support the effort of protecting architectural heritage; including, the criteria to be applied when selecting proposed protected structures for inclusion in the Record of Protected Structures. It also offers guidance to Planning Authorities on issuing a declaration on a protected structure and determining planning applications in relation to protected structures, a proposed protected structure or the exterior of a building within an ACA. While the guidelines are primarily aimed at Planning Authorities, it is intended that they will also be of assistance to owners and occupiers of protected structures, of proposed protected structures and of buildings within ACA's, and to those proposing to carry out works which would impact on such structures.

### **Guidelines for Planning Authorities on Sustainable Rural Housing 2005**

Provides guidance on forming policies for facilitating sustainable rural housing

### **Landscape and Landscape Assessment 2000 - Consultation Draft of Guidelines for Planning Authorities**

These Draft Guidelines were prepared to deal with landscape considerations, indicating specific requirements for Development Plans and for development control regarding landscape management. However, they were never brought beyond draft stage.

### **Wind Energy Guidelines for Planning Authorities, 2006**

These Guidelines state that the assessment of individual wind energy development proposals needs to be conducted within the context of a “plan-led” approach. This involves identifying areas considered suitable or unsuitable for wind energy development. These areas should then be set out in the development plan in order to provide clarity for developers, the planning authority, and the public. They aim to ensure a consistency of approach in the identification of suitable locations for wind farm development and the treatment of planning applications for wind farm developments

### **Irish National Forest Standard 2000**

The Irish National Forest Standard published by the Forest Service in 2000 provides the framework for the future of Irish forestry including the need for protection of biodiversity, landscape, archaeology and enhanced community involvement to ensure sustainable forest management

### **National Inventory of Architectural Heritage (NIAH)**

The National Inventory of Architectural Heritage was established to provide both expert and independent data to Planning Authorities on buildings of value. The NIAH provides a source of guidance for the selection of structures for protection, supplies data to local authorities, which helps them to make informed judgments on the significance of structures in their functional area, and fosters greater knowledge and appreciation of Ireland's architectural heritage.

### **Green Paper on Sustainable Energy (1999)**

This paper set a target of increasing the percentage of electricity generated by renewable sources from 6.3% in 2000 to 12.39% in 2005, which will be achieved by the installation of an additional 500 MW from renewable energy sources by 2005, mainly from wind energy. Following on from the Green Paper, the main aim of the Strategy for Intensifying Wind Energy Deployment (July 2000) is to support the delivery of this 500 MW target of renewable energy-based electricity generating plant.

#### **2.4.4 International Conventions and Agreements**

Ireland has ratified a range of International Agreements in relation to our environment. Such Agreements place legal obligations on the State in relation to the conservation and management of our environment and heritage.

### **EU Water Framework Directive (2000/60/EC), 2000**

The Water Framework Directive represents a major revision of EU water policy and establishes a framework for the protection of inland surface waters, transitional waters and groundwater. One of the main requirements of the Water Framework Directive is the development of “River Basin Management Plans” and the designation of a competent authority for each river basin district (RBD). Thus it is based on the concept of River Basin Districts, i.e. the catchment of the river, rather than administrative areas whether county or other area. This EU Directive was transposed into Irish law in 2003 and Aims to prevent any deterioration in the status of any waters and to achieve at least “good status” in all waters by 2015. Article 12 and 13 set out obligations on Local Authorities by June 2009.

The legislation is being implemented through the establishment 7 River Basin Districts (RBDs), 3 of which are international river basin districts (iRBDs), and the co-ordination of actions by all relevant public authorities. In 2004 this process involved completing the characterisation of river basins including identifying economic and other pressures. In 2006 the level of monitoring required for each river basin was determined. 2008 will see the publication of Draft River Basin Management Plans for consultation and finalisation in 2009 including a program of measures. There are two River Basin Districts in Westmeath – the Shannon RBD and the Eastern RBD and management plans for both districts will be finalised during the course of the Plan period. When finalised, these programmes will include a programme of measures; e.g. for waste water treatment plants; which will include requiring planning authorities to take cognisance of impacts of development on the river basin.

### **EU White Paper on Renewable Energy (1997)**

This paper identified a potential growth in the contribution of renewable energy to total energy supply from 14.3% to 23.5% by 2010. Consequently, Directive 2001/77/EC of September 2001 on the

promotion of electricity from renewable sources in the internal electricity market places an obligation on Member States to establish a programme to increase the gross consumption of renewable energy-based electricity generating plant ("green electricity"). The indicative target addressed to Ireland in the Directive is to increase green electricity from 3.6% of gross electricity consumption in 1997 to 13.2% by 2010.

#### **EU Freshwater Fish Directive (78/659/EEC)**

The EU Freshwater Fish Directive (78/659/EEC) was ratified by Ireland with S.I. 293 of 1988, and aims to protect those fresh water bodies identified by Member States as waters suitable for sustaining fish populations. The Directive will be repealed in 2013 by the EU Water Framework Directive.

#### **EU Urban Waste Water Treatment Directive (91/271/EEC) 1991**

Directive 91/271/EEC aims to protect surface inland waters by regulating collection and treatment of urban waste water and discharge of certain biodegradable industrial waste water (basically from the agro-food industry). The Directive sets targets dates for the provision of specified level of collection and treatment facilities. In particular it requires, for all agglomerations above 2,000 population equivalents, sewerage systems and secondary, i.e. biological waste water treatments.

#### **EU Major Accident (Seveso II) Directive (96/82/EC) 1996**

This Directive aims to prevent major-accident hazards involving dangerous substances. Hazardous sites are identified that may pose a threat and development should be limited in the vicinity of such sites. The control of establishments for the purposes of reducing the risk, or limiting the consequences, of a major accident is a mandatory objective of a Development Plan.

#### **Energy Performance in Buildings Directive, 2005**

Arising from the Kyoto Protocol, the EU has set the reduction of greenhouse gas emissions as an important objective. The most significant greenhouse gas is CO<sub>2</sub>, primarily from energy use and over 40% of such emissions derive from energy use in buildings including 27% from housing. The energy used in buildings could be reduced by having more energy efficient design and construction. The EU adopted the Energy Performance in Buildings Directive in 2002 and it has since been transposed into Irish legislation. Legislation requires:

- the energy rating of newly constructed buildings, existing buildings (when existing buildings are let or sold) and of public service buildings;
- improvement of the energy efficiency of certain classes of boilers and heating installations; and
- inspection of air-conditioning systems.

Energy rating requires that in the design of a building a performance target must be set out and when the building is completed it must perform as well as or better than the target. From January 2009 Westmeath County Council as a Housing Authority will have to do an energy rating for all its housing at every letting.

#### **Nitrates Directive (91/676/EEC)**

The Nitrates Directive (91/676/EEC) – Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources – was adopted in 1991 and has the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution, with the primary emphasis being on the management of livestock manures and other fertilisers.

#### **Groundwater Directive 80/68/EEC**

Groundwater Directive 80/68/EEC requires Member States to apply a system of investigation and authorisation to waste disposal and other activities in order to ensure that groundwater is not polluted by dangerous substances.

### **Surface Water Directive 75/440/EEC**

The Directive aims to protect public health by ensuring that surface water abstracted for use as drinking water reaches certain quality standards before it is supplied to the public. The Directive lays down nonbinding 'guide' values and binding 'imperative' values and requires Member States to monitor the quality of surface waters from which drinking water is abstracted and to take measures to ensure that it complies with the minimum quality standards. This Directive has been integrated into the proposed Water Framework Directive.

### **Dangerous Substances Directive 76/464/EEC (S.I. 258 of 1998, S.I. 12 of 2001)**

Dangerous Substances Directive 76/464/EEC creates a legislative framework for dealing with water pollution caused by an extensive list of dangerous substances. Member States are required to adopt pollution-reduction programmes that involve binding water quality objectives and a system of authorisations for discharges.

### **Environmental Impact Assessment Directive 85/337/EEC**

Environmental Impact Assessment Directive 85/337/EEC (amended by Directive 97/11/EC), requires Member States to carry out environmental impact assessments (EIA) on certain public and private projects, before they are authorised, where it is believed that the projects are likely to have a significant impact on the environment. The EIA procedure is an integral part of the planning process and the public can provide input and express environmental concerns with regard to the project. The results of this consultation must be taken into account during the authorisation process.

### **Integrated Pollution Prevention and Control (IPPC) Licensing**

A system of Integrated Pollution Prevention and Control (IPPC) licensing came into effect in Ireland on 12 July 2004. The primary aims of IPPC licensing are to prevent or reduce emissions to air, water and land, to reduce waste and to use energy efficiently. The IPPC system replaces Integrated Pollution Control (IPC) as the licensing regime applicable to certain industrial activities in Ireland.

### **Bathing Water Directive (76/160/EEC) S.I. 155 of 1992, S.I. 230 of 1996**

Directive 76/160/EEC concerns the quality of bathing water, with the exception of water intended for therapeutic purposes and water used in swimming pools. It lays down the minimum quality criteria to be met by bathing water.

### **Habitats Directive**

The EU Habitats Directive 92/43/EEC sets out a scheme of protection of particular animals and plant species, as well as a selection of habitat types. It provides for a network of protected sites known as Natura 2000, which will, when fully in place, include special protection areas designated under the Wild Birds Directive, as well as sites proposed under the Habitats Directive. The Natura 2000 network will provide specific protections for the sites, which will limit the extent and nature of development, which may have a detrimental effect on the flora or fauna identified therein. Ireland is required to propose relevant areas for designation as Special Areas of Conservation for the conservation of listed habitats and species, and to maintain their favourable conservation status. The Habitats Directive was transposed into Irish law by The European Communities (Natural Habitats) Regulations, 1997 (S.I. 94 of 1997).

### **Birds Directive**

The EU Directive 79/409/EEC on the Conservation of Wild Birds, requires that special measures be taken to conserve the habitats of listed migratory and wetland species in order to ensure their survival and reproduction in their area of distribution. The most suitable areas for these species are classified as Special Protection Areas. Ireland is obliged to "take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds". Only activities that do not have significant effects on birds are acceptable in Special Protection Areas. The Birds Directive also requires the avoidance of pollution or deterioration of habitats generally outside specifically protected sites. A listing of Special Areas of Conservation and Special Protection Area sites is given in Appendix Three of this Environmental Report.

**UN Convention of Biological Diversity 1992 ratified 1996**

The main objectives of this Convention were to conserve biological species, genetic resources, habitats and ecosystems; to ensure the sustainable use of biological materials; and to guarantee the fair and equitable sharing of benefits derived from genetic resources.

**European Landscape Convention 2000**

This encourages public authorities to adopt policies at local, national and international level to protect and manage landscapes.

**Convention on Wetlands of International Importance (Ramsar Convention 1971)**

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

**European Convention on the Protection of the Archaeological Heritage, 1992 (the 'Valletta Convention')**

This was ratified by Ireland in 1997 and as such we are legally bound by it. The aim of the Convention is to 'protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study'. It requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.

**Granada Convention for the Protection of the Architectural Heritage of Europe 1985**

This was ratified by Ireland in 1985 and establishes common principles and strategy, which have informed Part IV of the 2000 Planning and Development Act 2000-2004.

## **3 SEA METHODOLOGY**

### **3.1 STEPS IN THE SEA PROCESS**

The Environmental Report is an important element of the SEA process. The report is generated from a series of distinct steps taken in the assessment of the likely potential impacts of the proposed plan policies being implemented.

The steps taken in the execution of this SEA process follow the layout of this document, and are as follows:

1. Introduction to and familiarisation with the SEA process.
2. Setting out the Background to the County Development Plan Review.
3. Consultation with the Environmental Authorities, the public and officials with a range of expertise within the Planning Authority.

Scoping was carried out with the three environmental authorities prescribed in the legislation with the Environmental Protection Agency (EPA), Department of the Environment, Heritage and Local Government, and, the Department for Communications, Marine and Natural Resources. These were all consulted in order to determine the scope and the level of detail to be included in the environmental report. A scoping document was submitted to the authorities to facilitate this consultation. A scoping report was prepared to show how the responses received from these authorities were taken account of when preparing the Draft Plan and Environmental Report and this is contained in Appendix Two.

Many other bodies and authorities were consulted as part of the SEA process to source environmental baseline information.

A pre-draft public consultation took place from the 25th March to the 19th May 2006. An SEA issues paper was made available on the website and at other locations for public viewing during this time and all submissions that were received relating to environmental issues and concerns informed the SEA process. These are summarised in the Manager's Report that was submitted to the elected members on the 14th July 2006 and is available in the County Council offices for viewing.

An inter-departmental SEA Steering Group was established within the Council to ensure a broad range of expertise was available to input into the SEA process. This group consisted of representatives from the water services and environment sections and also the Heritage and Conservation Officers. They were consulted at the various stages in the process and made valuable contributions towards identifying significant environmental issues, drafting the environmental protection objectives, assessing the policies, considering alternatives.

4. Establishment of Environmental Baseline and Trends for the county:

Baseline data was collected based on the information included in the scoping report as well as having regard to the requirements of the SEA Directive. The various factors used to describe the current state of the environment included employment and economic development, traffic and transportation, noise, air quality, built heritage, natural heritage and bio-diversity, soils and groundwater, surface water management, utilities and landscape. Human health was considered, either directly or indirectly, under a variety of factors including traffic and transportation, noise, air quality and surface water management. Much of the data was extracted from existing data sources.

5. Identifying significant Existing Environmental Issues in County Westmeath.

This was facilitated by the various forms of consultation that took place as part of the SEA process as described above.



6. Drafting of Environmental Protection Objectives from regional, national and international environmental policy, consideration of the significant environmental issues facing Westmeath specifically and from best practice.
7. The Likely Significant Effects of implementation of the County Development Plan were established through the identification of conflicts between plan policies and environmental objectives (assessed in matrix format).
8. Where conflicts were identified, opportunities to prevent, reduce, or offset the adverse environmental effects were explored and policies altered or augmented where necessary to address / mitigate the effects.
9. Where the conflicts and consequent adverse significant impacts could not reasonably be prevented, reduced or offset, recommendations were made to the Elected Members to remove or change the conflicting policy with a view to preventing the potential effect.
10. Alternatives strategies were considered based on environmental information gathered and a preferred strategy was reached for the County Development Plan.
11. Monitoring measures were identified in order to quantitatively assess the consequences of the identified impacts.

### **3.2 DIFFICULTIES ENCOUNTERED IN COMPILING THE REQUIRED INFORMATION**

The SEA Guidelines produced by the DoEHLG in 2004 state that the SEA process “does not require major new research”. As such, the Environmental Report was prepared and informed by many already available data sources.

Data sources that were used include; research that was carried out within Westmeath County Council, by the Central Statistics Office, by Midlands Local Authorities for the Midlands Waste Management Plan Environmental Report, by the Environmental Protection Agency and also the Heritage Data that has been collated by the DoEHLG and Westmeath County Council.

However there are a number of areas where there was insufficient data available or where the level of detail is not sufficient for the purpose of baseline. These are as follows:

- Completed and finalised Groundwater protection data - vulnerability etc, in the absence of a completed Groundwater Protection Scheme. Interim data however was available from the GSI and from River Basin District Project Offices, which informed the SEA process.
- Complete water body risk data in mapped format.
- Material assets – aggregates, minerals existing in the County that may be available for extraction.
- Data on levels and incidences of noise pollution
- Detailed human health data.

Other constraints included:

Time constraints were a problem at the time of carrying out the actual assessment of Draft policies since work on the Draft Plan itself was being carried out right up to the deadlines and so time was very limited for working with the completed policies to ascertain impacts, mitigation etc and to determine significance with the agreement of the Steering Group.

Limited resources were available for carrying out the SEA, especially GIS and mapping. There were also limits to the staff time resources for carrying out the SEA, proofing and cross-checking the Environmental Report both within the Forward Planning team and in the Local Authority as a whole, due to workload and other deadlines (eg the County Development Plan Plan) at the time.

## 4 CURRENT STATE OF THE ENVIRONMENT

### 4.1 INTRODUCTION

In line with the relevant legislation, this section gives a breakdown of detail describing:

- the current state of the environment as at August 2006, or as at the date of the most recently available data as stated
- the environmental characteristics of areas likely to be significantly affected and
- the existing environmental problems relevant to the plan, including those relating to areas of particular environmental importance

The likely evolution of the environment without implementation of a new Development Plan – the ‘do-nothing scenario’ is detailed for each environmental factor following the current state of the environment information.

The interrelationship between environmental factors is discussed within each section and as cross-overs emerge they are noted and dealt with in which ever section they are most relevant.

### 4.2 ENVIRONMENTAL BASELINE, TRENDS AND THE ‘DO-NOTHING SCENARIO’

#### 4.2.1 Landscape and Topography

##### General landscape/ topographical features

Westmeath has a variety of landscapes but the most prominent one can be described as a “undulating pattern of low hills, patches of woodland and bog, with many lakes nestling in shallow valleys”<sup>∞</sup>. Mountains are almost absent; the highest point is at 280 metres on the Hill of Mullagmeen in the extreme north of the County. The hills both conceal parts of the landscape and provide more commanding views of it, providing more variety and interest in the views available. In general, the areas of greatest scenic merit, such as Westmeath’s lakelands are also the areas of greatest nature value and are also the areas that attract visitors in numbers.

Landscape is an inseparable element in the structuring of settlement patterns and the location and distribution of its dwellings. Landscape form has been created by the forces of nature. Patterns of movement and settlement in the landscape have been created as a result of inhabitation of the landscape. Movement is facilitated by an intricate road structure, supplemented historically by railways and the canal system. Towns, villages, and small settlements form the nuclei for the population in rural areas. Estates with large houses, farmsteads and workers cottages have traditionally provided the pattern of dispersed habitation in support of working the land. Agricultural development has created many elements of the landscape; field boundaries, grass pastures, plantations of trees, drainage systems, property boundary walls and hedges.

The landscape of County Westmeath has been shaped within an unimaginably long timescale. Initially, over three hundred million years ago, it underwent a process of gentle folding of the limestone rock base. Much more recently, about one-and-a-half million years ago, the onset and impact of the ice age was to create the base structure of the landscape, which we know today. The moulding of the landscape underneath the ice created mounds and ridges of glacial deposits, with drumlins; (small, rounded hills), eskers and kames; (fluvoglacial ridges created under the ice) and moraines; (larger ridges created at the end of the advancing ice sheets).

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<sup>∞</sup> David Hickie, *‘Nature in Westmeath: A Wildlife and Habitat Guide’*, 2005

Thus, in Westmeath, we see predominantly a post-glacial landscape, with lakes and bogland, tree-covered eskers and drumlins. The drier ground topography west of Mullingar is formed by Carboniferous Limestone. The vegetation derives from the growth of peat bogs after glaciation and the development of enclosed pasturelands across the County.

It is possible to characterise the extraordinary local quality of much of the landscape:

- In the North of the County, centred on Castlepollard, the lakes combine with a hilly landscape, reaching into the drumlins of the northern counties
- The Lakeside areas of Westmeath are among the most scenic landscapes in Ireland, with a remarkable diversity between them
- Low-lying areas alternate between raised boglands and gently undulating landscapes which create short horizons and enclosed, intimate-scaled countryside
- To the east, the plain is relatively flat and relies on its vegetation of hedgerows and groups of trees to create a local environment
- The Royal Canal provides a remarkable passage through undisturbed landscape. It should be seen as a corridor where any development should be treated with great care to maintain the undisturbed quality of the land through which it runs
- Cultural Landscapes are those, which incorporate significant archaeological or historic remains, demesne landscapes and field boundary patterns, or cultural associations
- The main roads should be seen as landscape corridors where development is treated with special care, if only to maintain a good image of the County for passing travellers. Landscape characteristics will vary according to the location of the roads.

The capacity of the landscape to absorb development is clearly an important factor in the protection and cherishing of its local qualities. Open uplands will not easily shelter or hide development, although they frequently afford the backdrop of a varied skyline. Undulating landscapes have skylines, which are easily broken by building at horizon level, interrupting the natural enclosure of the landscape. They are, however, capable of absorbing well-sited single buildings because of the complex undulations, which create short horizons and visual diversity. Flat landscapes rely on softening the impact of development by well-developed boundaries and vegetation, which can help to stitch new development into the existing structure of the landscape.<sup>∞</sup>

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<sup>∞</sup> Westmeath County Council, 'Westmeath Rural Design Guidelines', 2005



### **Landscape Character Assessment**

A Landscape Character Assessment has been carried out for inclusion in the County Development Plan 2008-2014, which informs policy for wind energy development, and other development.

### **Protected views/landscapes**

It was an objective of the previous County Development Plan 2002-2008 to “preserve, improve and open up places or areas from which views or prospects of high amenity value may be enjoyed”. Specific places from which views of exceptional importance may be enjoyed have been identified in the previous County Development Plan and these include views across Lough Ree, at Uisneach, from Knockastia, Coolatore, around each of the lakeland areas and from the N6 towards the Eskers near Tyrellspass.

These views are enjoyed by local people and tourists alike and are very important in terms of the overall character and setting of valued amenity and heritage areas. In this regard, objectives are contained in the County Development Plan 2008-2014 to preserve and improve these views and one such objective is that “no structure shall be so sited as to hinder the preservation of such views or prospects”. It is also an objective to develop in an appropriate and sensitive manner car parking facilities and viewing places at points where views and prospects of special importance are obtained and where appropriate and in a sensitive manner to have lowered or removed any walls, fences, hedges or other obstructions to such views. The protected views are listed in the County Development Plan 2008-2014.

### **High Amenity Areas**

Having regard to their amenity and recreational potential, the following areas are designated as Areas of High Amenity:

- Lough Ree Area
- Lough Lene Area
- Lough Owel Area
- Lough Ennell Area
- Lough Derravaragh Area
- Lough Sheelin Area

The aims for the high amenity areas as quoted in the previous Development Plans for Westmeath County and Athlone 2002-2008 are:

- "To conserve the natural resources of each area in terms of scenic value, natural rural character, wildlife and water quality.
- To provide for the use of each area for recreational purposes by the local communities.
- To provide for the development of tourism".

The existing land use of the designated Areas of High Amenity is mainly agriculture and forestry. Development not directly related to these land uses or to the recreational and amenity function of these areas will normally be excluded through Development Control.

A 'Buffer zone' for the Lough Ree High Amenity Areas was also identified and the previous CDP policy states that rural housing should be restricted in this area. However, extractive industries were not mentioned as restricted in Buffer Zones.

### ***Do-Nothing Scenario***

Continuation of existing policy will restrict development in High Amenity Areas and buffer zones to protect these sensitive areas from unsuitable development. However unsuitable developments such as quarrying and the extractive industries are not specifically mentioned as restricted in all of these areas. The visual impact of such development could be potentially significant in sensitive areas.

Continuation of existing rural housing policy will restrict housing development in the open countryside to those meeting the 'local need' criteria, helping to protect the landscape from overdevelopment. The existing rural design guidelines will help to ensure that applications for rural housing are of a higher quality and that new housing will be integrated into the landscape where possible. The lack of a full landscape character assessment to guide future policy formulation for quarrying and wind energy for example may result in inadequate consideration being given to cumulative effects on landscape from development. A landscape character assessment would help to strengthen policy for landscape protection as appropriate and would guide comprehensive strategies for development.

A lack of new policy to address issues in villages such as Rochfortbridge and Tyrellspass in light of the reduction of traffic that will occur in these villages and the failure to provide new strategies to address issues such as traffic calming, environmental improvement and increased pressure for residential development for Dublin based commuting for example, would result in poor planning for the future needs of these villages.

## **4.2.2 Population and Human Health**

### **Population**

The 2006 CSO Census shows that the population figures for Ireland have increased by 8.2% from 3,917,203 to 4,239,848 an actual increase of 322,645 persons. This four-year period has experienced the highest annual growth rate on record.

Within this, the midlands region grew by 11.1%, which comfortably exceeds the national average of an 8.2% increase giving a midlands population of 251,380. County Westmeath increased in population by 10.4% from 71,858 to 79,346 an actual increase of 7,488 persons.

Westmeath accounts for 31.5% of the Midlands Region and 1.9 % of the State population.

The increase in population in County Westmeath can be attributed to positive net migration and a negative natural increase resulting in an overall increase.

The 2002 to 2008 Westmeath County Development Plan projected population for the County to reach 79,343 by 2020. The 2006 CSO figures has shown that the actual population in 2006(79,346) has reached that figure which was projected for 2020. This demonstrates the overwhelming growth that has taken place within the County in the past number of years. It also highlights the importance of comprehensive population analysis as a basis for the new CDP in order to target policy at areas in most need of attention and to provide an appropriate

amount of zoned land and services across the county in a sustainable manner to meet future population trends.

The four fast growing areas (by electoral district) in the County in the 2002-2006 census were Kinnegad (66.5%), Riverdale (39%), Mullingar Rural (37.6%), and Devlin (34.6%).

Aside from marginal decreased, the areas that suffered population decline between 2002 and 2006 were:

- Emper decreased by 5.9%, from 203 to 191, 12 persons
- Glore decreased by 14.8%, from 169 to 144, 25 persons
- Rathowen decreased by 2.5%, from 325 to 317, 8 persons

The Population Distribution map attached shows that high populations are concentrated in recognised urban centres of Athlone, Mullingar and Moate. However the second highest population concentrations are predominantly in the areas immediately surrounding these urban centres, showing that urban sprawl has taken place. This is an unsustainable settlement trend and recent national and regional policy aims for more balanced development and urban consolidation in order to counteract sprawl.

## **Human Health**

Human health protection is a fundamental aspect of environmental protection. The level of environmental public health protection in this country is high, especially since the threat from infectious diseases has largely diminished due to successful immunisation programmes and improved diet, housing and general living conditions. Ireland's temperate climate is a contributory factor in reducing risks to public health, especially in terms of infectious diseases and sun exposure. Climate is discussed in more detail in Section 4.2.4.

Human Health issues in Westmeath are generally concerned with the quality of drinking water and air quality and also to the quality of life of Westmeath's citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity in the County.

Drinking water quality is dealt with in detail in section 4.2.3. Air Quality, which is also an environmental issue that impacts on human health is dealt with elsewhere in section 4.2.4 entitled 'Air and Climate'.

## **Health and Safety**

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations gives effect to Council Directives 96/82/EC and 2003/105/EC, hence implementing the Seveso II Directive on the control of major hazards involving dangerous substances. A 'major accident' is defined in the Regulations as an occurrence such as a major emission, fire or explosion resulting from uncontrolled developments in the course of the operation of any establishment, leading to a serious danger either to human health or to the environment, whether immediate or delayed, inside or outside the establishment, and involving one or more dangerous substances. Under these regulations, the Health and Safety Authority must give advice to the planning authority when requested in relation to the siting of new establishments, modifications to an existing establishment to which the Directive applies or proposed development in the vicinity of an existing establishment.

The regulations apply to companies where dangerous substances are present in quantities equal to or above specified thresholds. One such company exists in the vicinity of the Westmeath County Council administrative area, that is Elan Corporation plc. This company is located in Athlone town but just outside the Athlone Town Council administrative area. The HSA recommends that a consultation distance of 1000 metres be taken from the perimeter of the site within which the relevant planning authority will take advice in relation to any landuse planning from the HSA.

## Noise Pollution Control

In Ireland, the principal law relating to noise is Sections 106, 107, and 108 of Part VI of the Environmental Protection Agency (EPA) Act 1992. The Minister for the Environment has power under Section 106 of this Act, after consulting with other concerned Ministers and the EPA, to make regulations for the purpose of the prevention or limitation of any noise which may give rise to a nuisance or disamenity, constitute a danger to health or damage property. However, no such regulations have been introduced to date.

Local Authorities have powers under Section 107(1) to serve a notice on any person in charge of premises, processes or works, other than an activity which is licensable under IPC, when they consider that it is necessary to do so in order to prevent or limit noise. The EPA has the same power in relation to an activity licensable by it.

The (Noise) Regulations 1994 (S.I. 179) which implemented Section 108 of the EPA Act, 1992, were designed to simplify and strengthen the procedures for dealing with noise nuisance. A Local Authority, the EPA or any other affected person may complain to the District Court under Section 108(1) of the EPA Act, where any noise is so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause or annoyance to a person in any premises in the neighbourhood, or to a person lawfully using any public place.

Noise and traffic can be an issue of concern to many residents living close to major roadways, factories, shopping centres, quarries, waste facilities, sports stadia and other facilities attracting significant volumes of traffic. However no specific data in relation to levels or incidences of noise pollution was available at the time of preparing this report.

## Health Services

There is one Midland Health Board Hospital in the County, Midland Regional Hospital, Mullingar. The total of patients on waiting lists in December 2003 for Mullingar hospital was 125, compared to 403 people on waiting lists in Tullamore hospital. The waiting list statistics<sup>∞</sup> showed that for the Specialty area of Gynaecology for example, adults on the public in-patient waiting list for 3 to 6 months were 58, 6 to 12 months were 49, 12 to 24 months were 15 and 24 months were 3 people. No children were on an inpatient waiting list for public patients. Many other health services exist in the County including general practitioners, nursing homes and dentists.

## Quality of Life and Travel Patterns

There is little doubt that increased economic development coupled with reduced unemployment levels has brought significant improvements in living standards to many people in recent years. In turn this has also seen a change in the leisure /work trade off; the environmental impact of increased development and enhanced prosperity is not without some cost in terms of increased commuting times, chronic time shortages, lack of leisure time, reduction in air quality and encroachment of urban areas into the countryside. All of these factors can impact on human health.

The returns from the 2006 Census<sup>∞</sup>, show that driving to work by car was the principal means of travel used by Irish workers in 2006 and indicate that commuting to work has become longer and no doubt less pleasant for many people. The number of private cars licensed for the first time in the State grew from 166,270 in 2005 to 173,273 in 2006. <sup>∞</sup>. The number of workers driving their car to work increased from 55.1 per cent in 2002 to 57 per cent in 2006, while the proportion of cyclists travelling to work was reduced. The average distance travelled to work in 2006 was 15.8km, little change on 2002. Rural based workers travelled an average of 20.9km compared with 12.8km for workers living in urban areas.

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<sup>∞</sup> [http://www.dohc.ie/statistics/waiting\\_list/2003dec2.pdf](http://www.dohc.ie/statistics/waiting_list/2003dec2.pdf)

<sup>∞</sup> (<http://www.cso.ie>)



Commuting patterns tend to be from rural to urban areas and from smaller settlements to larger towns or cities. Commuting from east Westmeath to Dublin city is a feature, particularly from towns along the N6 and N4 routes. The opening of the new Galway to Dublin motorway is likely to encourage commuting for longer distances to Dublin, from areas further and further away. This will impact negatively on people's quality of life, as well as increase air pollution.

The prevalence of low-density suburban sprawl in recent years is relevant to this issue, since this tends to make public transport services economically unviable, increasing reliability on the private car to travel to work, shops or recreation.

### **Amenity, Walking and Cycling**

The availability of open space, green linkages such as walk and cycle ways and recreational facilities has a very important role in creating quality and healthy environments for all, through:

- Allowing appreciation of the natural environment and ecology by providing access to natural heritage, woodland and landscape within easy reach of homes, for physical activity, rest and leisure use, both in densely populated and disadvantaged communities, and in new developments.
- Preventing over-development and 'town cramming'.
- Providing opportunities for more active lifestyles, sporting activity, community development and social interaction.
- Facilitating access to the countryside, linking urban and rural areas.

Established and maintained walking routes within the County include the 'Westmeath Way', the 'Táin Trail' and 'Sli na Sláinte'. The canal, lakes and rivers also have valuable amenity and recreational value and it is important therefore that their amenity value is maintained. Further detail is given on the quality of these waterways in other sections.

#### ***Do-Nothing Scenario***

Provision for the population projected for the coming years by the last Development plan without supporting policies would result in under provision of essential infrastructure and services. Without a review of zoning objectives and policies in relation to road, water, sewerage and community infrastructure, the population up to 2014 of the County will not be adequately provided for. Retaining existing population targets and extrapolation of past trends into the future will result in inappropriate levels of service provision.

Continuation of public health trends would mean that the factors that presently impact upon human health remain and existing trends will be extrapolated into the future. The main feature is that of transport patterns. Continuation of current trends would mean that the under provision of public transport will continue and over-reliance on the private car would exacerbate. Current high levels of major road building would have the effect of inducing private car travel and the continuation of such a level of investment in this area would intensify the commuting issue. Long distance commuting patterns if they continue or worsen would have a detrimental effect on community life, human health, and the environment due to associated carbon emissions.

Continuation of development trends without strong policies on water quality protection and the implementation of the Water Framework Directive may result in the deterioration of drinking water quality, especially if development that poses threats to groundwater occurs in areas of groundwater vulnerability or where groundwater bodies feed into surface water supplies.

### **4.2.3 Water**

In 1997 the Government published a policy document entitled Managing Ireland's Rivers and Lakes; a catchment based strategy against eutrophication. The primary objective of this document was to address on-going enrichment of surface waters on a catchment basis. In 1998 this policy was given

statutory effect with the introduction of the Phosphorus Regulations. This introduced a 10-year time frame to achieve stringent new standards. These standards were defined based upon baseline data gathered by the EPA in the 1995 1997 review period.

Pressure to tackle deteriorating water quality due to high nitrate levels has been brought forward from the EU Nitrates Directive agreed in December 1991 and later translated into Irish law.

The EU Water Framework Directive came into force in December 2000. The Water Framework Directive as previously mentioned specifies water quality targets that are even more ambitious than those of the national Phosphorus Regulations. A 16-year implementation time frame is envisaged to achieve at least 'good status' for all waters. The catchment-based approach to water quality is enshrined in the Directive and Member States are required to develop River Basin District Management Plans by 2009.

Earlier catchment based monitoring and management systems relevant to Westmeath include the Lough Derg /Lough Ree Catchment Monitoring and Management System and the Three Rivers Project. Information gathered from these projects will be incorporated into the RBD projects. Local authorities will have a key involvement in managing the RBD Projects.

The Water Framework Directive requires that stricter water quality regulations will have to be taken on board at national level. It demands a more comprehensive and integrated approach to water management and will have significant implications for resources given its scope and ambitious targets. The WFD will govern all aspects of the aquatic environment including surface and groundwaters.

Westmeath is divided between two regions for the purposes of implementation of the Water Framework Directive. Most of the County is within the Shannon Region (ShRBD) but a portion to the east of the County; the Boyne Catchment is within the Eastern River Basin District Area (ERBD).



## Surface Water Quality

Since the 1970s, there has been a gradual, insidious increase in slight to moderate pollution in a number of lakes in Westmeath<sup>∞</sup>. This is due mainly to agriculture but also to poorly treated sewage from towns and an increase in one-off houses in the countryside. This condition is called enrichment or 'eutrophication'; a deterioration in water quality caused by an excess of nutrients, such as phosphate and nitrogen. Waters so affected become unsuitable for Brown Trout, which are indicators of the highest water quality, and a range of other animals can no longer survive. In extreme circumstances, entire lakes can suffer from algal blooms, some of which are toxic. Eutrophication results in an undesirable disturbance to the balance of organisms present and to the quality of the water concerned.

The risk of failure to achieve good status can arise from different sources. These include directly influencing factors, such as significant emissions into or abstractions from the waters, and changes to the morphology of the waters or their boundaries with adjacent lands. Any risk assessment process must also take account of activities taking place at some distance from the waters but capable of effecting their status. In such cases consideration is given to the pathway whereby the activity is connected to the water body as this can either enhance or mitigate the effect of the activity on the water status.

For surface waters pressures from water abstractions, water flow regulations, morphological alterations, point sources and diffuse sources should be identified to enable their relative significance to be assessed. Flow regulation pressures, which include structures such as hydroelectric dams and major water supply reservoirs, and morphological pressures (or physical alterations) apply only to surface waters. Morphological pressures include activities such as channel alterations, agricultural enhancement, flood defences, locks and weir facilities, dredging, ports and tidal barrages. A database of these pressures was generated by the RBD project based on collation of datasets from disparate organisations.

Point source pressures identified for surface waters include Urban Wastewater Treatment Plants (UWWT), storm overflows, sludge treatment plants, Integrated Pollution Prevention and Control (IPPC) industries and non IPPC industries, Local Authority Licensed (Section 4) industry discharges, combined sewer overflow (CSO) discharges, Water Treatment Works (WTP) discharges, Mines, Quarries, and Landfills. The influence of point pressures on water bodies tends to be clustered around towns and villages.

Diffuse source pressures include widespread activities such as agriculture, non sewerer rural housing, urban land use, transport, some industrial activities, peat exploitation and acidification from forestry activities.

Eutrophication of inland waters is considered to be Ireland's most serious environmental pollution problem and the most relevant environmental issue for Westmeath. Agricultural nutrient inputs are the most significant portion of nutrient load (nitrogen and phosphorus) and are higher in more intensively farmed areas. However, the EPA 'Ireland's Environment 2004' Report confirms that a significant portion of the nutrient loss from agriculture occurs during winter months when plant and algal growth rates are lower therefore the resultant impact is not as severe.

Other sources of nutrients include wastewater treatment plants, industry, and septic tanks. In addition to the measures taken in the agricultural sector such as agricultural bye-laws, measures continue to be taken to prevent pollution from other sectors. These measures include legislation to regulate discharges from industrial and commercial activities, continued major investment in urban wastewater treatment facilities nationwide, additional legislation to regulate the discharge of dangerous substances and the virtual elimination by the detergents industry of phosphate-based domestic laundry detergents.

According to water quality data collected by the EPA, the increase in eutrophication has slowed nationally, because of improved sewage treatment and upgrading of farmyards, where slurry and silage effluent are properly contained. Fertiliser management in agriculture needs to be improved.

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

## **Water Quality in ERBD Portion of County Westmeath**

The ERBD Characterisation Report covers the Boyne catchment, some of which is in the east of County Westmeath. The Westmeath portion of the ERBD contains 26 river water bodies and 4 lake water bodies. Significant watercourses include the Boyne, Yellow, Castlejordan and Milltown. Following a risk assessment of River Water Bodies in the Boyne Catchment, it was found that all of the Boyne catchment river water bodies within the County fell into the 'probably at risk' category. It can be seen that the highest incidence of risk comes from channelisation, and to a lesser degree, intensive land use. The Boyne catchment has been extensively drained, particularly in the 1970s and 1980s as a means to improve and expand farm land.

River water quality in this area is generally poor, with all 12 River Water Bodies assessed by the EPA having Q-values of less than 4, placing them "at risk." Westmeath also has significant agricultural activity and this is reflected in the risk assessment.

In terms of point sources the Westmeath ERBD area contains 5 Waste Water Treatment Plants. The largest of these works are Rochfortbridge and Kinnegad, while Clonmellon is the smallest. There are 3 Section 4 dischargers, 2 of which discharge of the Milltown River. There are 4 IPPC authorised activities, with 2 peat extractors, 1 pig farm and a cement manufacturer. There is one combined sewer overflow (CSOs), located at Trim Rd, Kinnegad. There is also one pumping station, located at Cork Hill, Kinnegad.

There are 2 Water Treatment Plants in this portion of Westmeath, at Killucan Reservoir and Ballany, serving a p.e. of c.18000 and 7000 respectively.

The area contains one quarry, Shay Murtagh Ltd., and 7 waste sites. Of these sites, one is active; Marlinstown Bog. There is one surface water abstraction located at Lough Lene licensed to abstract 4500 m<sup>3</sup>/day and 2 groundwater sources (Lewinstown & Raharney). These range in volume from 7m<sup>3</sup>/day to 14 m<sup>3</sup>/day.

For the River Water Bodies overall risk from all pressures, 16 are identified as being "at risk", and 10 "probably at risk". Two River Water Bodies are identified as being "at risk" from diffuse source pressures, with a further 21 "probably at risk". Agricultural land use (RD1) is the most significant factor. No other diffuse sources lead to a 'probably at risk' designation, though a number of septic tank clusters are identified. 7 river water bodies are "probably at risk" from point source pressures. The most significant point source pressure comes from WWTPs, with CSO's and IPPCs providing a lesser degree of risk. All river water bodies are considered to be "probably at risk" from morphological pressures. The channelisation test is responsible for all of these risk designations, with intensive land use being a lesser risk factor. Two River Water Bodies (all on the Deel River) are "at risk" from hydrological pressures, and 3 "probably at risk" (also on the Deel sub-catchment).

The lakes in the east of the county such as Lough Lene and White Lake still have good water quality and a healthy lake ecology. Overall, one Lake water body is "at risk", 2 "probably at risk" and one "not at risk". All lakes are "not at risk" from diffuse sources. No Lake Water Bodies are "at risk" from point source pressures. Three Lake Water Bodies are "probably at risk" from morphological pressures, with channelisation leading to these designations. One lake, Lough Lene was "at risk" from hydrological pressures.

## **Protected Areas in the ERBD portion of Westmeath**

- Salmonid Waters - River Boyne
- Special Areas of Conservation- River Boyne/Blackwater
- Special Protection Area Rivers Boyne & Blackwater, Boyne Coast & Estuary, White, Ben & Doo
- Loughs Bane & Glass,
- Recreational Waters - Lough Lene Cut
- Nutrient Sensitive Waters - None
- Drinking Water (Rivers) - None

- Drinking Water Lakes Lough Lene, Lough Bane

## Water Quality in ShRBD Portion of County Westmeath

General conclusions about risks to surface water quality in the district as a whole were made as follows:

77% of river water bodies comprising 84% of river water body area are at risk or probably at risk. Morphological alterations (mainly historical drainage works) and diffuse pollution are the dominant pressures on ShIRBD rivers, with morphological pressures more widespread than diffuse pollution pressures.

For lakes, 74.4% of water bodies and 96.4% of lakes water body area, are identified as being at risk or probably at risk. Impact data and abstraction pressures accounted for the highest number of at risk water bodies (13 and 11 respectively), while the dominant pressures on probably at risk water bodies were diffuse source pollution and morphological pressures.

Detail specific to Westmeath can be seen in the attached maps, which include detail on the following risk assessment results for surface water in the Shannon RBD portion of the County:

Lake water bodies that are 'probably at significant risk' from diffuse sources are: Loughs Owel, Derravarragh, Ennel, Sheelin, Bane, Ree, Kinale and Glen Lough; from morphological sources, those 'probably at significant risk' are: Lough Bane and Lough Ree; from point sources Lough Ree is 'at significant risk' and Loughs Ennell, Kinale and Killinure are 'probably at significant risk'. Overall results for lake water bodies showed that Loughs Ree, Derravarragh, Sheelin and Kinale are 'at significant risk' of pollution. Trends in water quality in recent years have been that the condition of Lough Ree has deteriorated<sup>∞</sup>.

River water bodies that are 'at significant risk' from diffuse sources are the Brosna and the Inny. Those 'probably at significant risk' from diffuse sources are the Shannon, parts of the Inny and the Yellow River. From morphological sources, some tributaries of the River Inny, (at Foxhall) are 'at significant risk' and the Dungolman and Brosna are 'probably at significant risk'. From point sources, rivers 'at significant risk' are the Brosna, Shannon and Yellow River and 'probably at significant risk' are parts of the Inny and the Gaine River. Overall risk assessment for rivers in this portion of the County showed that the Shannon, Brosna, Boor, Inny, Dungolman and Yellow rivers are 'at significant risk' from pollution<sup>∞</sup>.

According to the Lough Derg and Ree Catchment Monitoring and Management System, a population of about 157,000 in the catchment are not connected to a public sewerage system. The vast majority of these rely on septic tanks to treat their wastewater. Conventional septic tank systems (septic tanks and percolation area), properly installed and maintained, are satisfactory where suitable subsoil conditions exist. However, the Environmental Protection Agency (EPA) has stated that a significant number of septic tank systems do not function properly. This is mainly because they have been poorly constructed, installed, operated, maintained or located in areas with unsuitable sub soils, or the percolation area is inadequate.

## Nitrates

The concentration of nitrate in rivers is a key quality indicator because of its enriching effect as a nutrient and importantly because of the potential health implication of high nitrate concentration in river waters abstracted for potable supplies.

The EU Nitrates Directive (91/676/EEC) requires member states to take specific measures to protect surface and underground waters from nitrate contamination from agricultural activities. In addition direct waste discharges, such as sewage, may also contribute to such

<sup>∞</sup> Hickie, 'Nature in Westmeath; a Wildlife and Habitat Guide'. 2005

<sup>∞</sup> Shannon River Basin District Characterisation Report, 2006

contamination and the EU Directive on urban wastewater treatment (91/271/EEC) provides for the removal of nitrogen from such waste in certain circumstances.

The Irish Regulations implementing the Directive, were enacted and published as the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2005 (S.I. No. 788 of 2005)). In complying with the Nitrates Directive a four-year action plan is being implemented, starting this year. Under these Regulations, a local authority shall carry out, such monitoring of surface waters and groundwaters at selected measuring points within its functional area as makes it possible to establish the extent of pollution in the waters from agricultural sources and to determine trends in the occurrence and extent of such pollution. The local authority also has a role in carrying out enforcement under these Regulations.

### **Nutrient Sensitive Waters**

Nutrient sensitive waters in Westmeath have been identified. Lough Ree on the River Shannon has been identified as a sensitive area in its entirety. The River Brosna, downstream of Mullingar sewage outfall [opposite intersection of regional road (R400) with N52 south of Mullingar], to Lough Ennell are also considered sensitive.

Westmeath County Council can compel farmers to prepare nutrient management plans where this is considered necessary to prevent or alleviate water pollution. This power is provided under Section 21A of the Water Pollution Act. The Department of the Environment and Local Government issued detailed guidelines on the preparation of nutrient management plans to local authorities. A Nutrient Management Plan is recognised as a key tool in curtailing nutrient (Phosphorous and Nitrogen) losses from agriculture. It involves a planned approach to the control and safe use of nutrients from all sources on the farm. Crop nutrient application levels are brought into line with crop requirements so that losses to the environment are minimised. Where a farmer receives a notice to prepare a nutrient management plan an existing plan prepared for REPS, for example, will suffice.

Agricultural bye-laws, introduced under Section 21 of the Water Pollution Act, are now in force in Westmeath, which were adopted to deal with specific problems in specific catchments listed by townland. All persons farming land in those townlands listed in Schedule 3, located to the north of the County have been required to submit a Nutrient Management Plan to the Council for its approval. Persons farming land within the townlands identified in Schedule 2, including land surrounding Lough Owel and lands to the north of the county; must provide 20 weeks storage capacity for livestock manure arising from livestock housed during the winter period and shall not apply nutrients from an intensive agricultural enterprise, save in accordance with an approved nutrient management plan<sup>∞</sup>.

### **Water Supply, Conservation and Drinking Water Quality**

The vast network of watermains, pumping stations and treatment plants situated throughout the county require continuous maintenance by Westmeath County Council.

2000 million gallons of water are supplied each year to over 14000 premises from seven separate sources. Ongoing sampling of rivers and lakes is monitored by Council staff and Midland Health Board staff under the European Union Drinking Water Directives.

Westmeath County Council have major Water and Sewerage schemes ongoing, the largest being the Annagh Reservoir scheme with an estimated cost of £4.1million and Mullingar Sewerage Scheme with an estimated cost of £2.4m. The council also has responsibility for the Rural Water Programme, which was devolved from Central Government in 1997.

Water conservation is an essential element to ensure optimal use of natural resources. Conservation measures include not only the monitoring of usage of water, early detection of leaks (it is estimated that currently there is a 40% level of water leakage) and the replacement of infrastructure but also an awareness programme for consumers.

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<sup>∞</sup> Westmeath County Council, *Water Pollution (Agricultural ) Bye-Laws, 2000*

The Government's National Water Pricing Policy Framework requires the charging of non-domestic (business) customers for water services so as to recover the full costs of providing water services to customers. This is in accordance with National and EU policy on the application of the "polluter pays" principle, including the EU Water Framework Directive. In order to implement the National Policy, the Council is required to apply charges to the non-domestic sector on the basis of the "water in/water out" principle, i.e. the recovery of the full cost of all water services (water supply and sewage collection and disposal) by means of a unit charge in respect of metered water supply.

Considerable investment has been made nationally in successfully improving drinking water quality, especially in the larger supply schemes, although according to the EPA National 'State of the Environment Report', 2004, unacceptably high microbiological levels are continually being found in many of the smaller private rural schemes.

A Directive on the quality of water intended for human consumption (98/83/EC) was proposed by the European Commission in 1995, and adopted in November 1998. Regulations to give effect to the Directive from January 2004 have been published by the Department of the Environment and Local Government (DELG).

In terms of the individual parameters, some features introduced in these Regulations are as follows:

- lead – limit value reduced from 50 µg/l to 10 µg/l; 15 year transition period to allow for the replacement of lead distribution pipes;
- pesticides – limit values for individual substances and for total pesticides retained (0.1 µg/l or 0.5 µg/l), plus additional, more stringent ones introduced for certain pesticides (0.03 µg/l);
- copper – limit value reduced from 3 to 2 mg/l.

Standards have also been introduced for new parameters such as trihalomethanes, trichloroethene, tetrachloroethene, bromate and acrylamide. A more stringent regime for monitoring microbiological parameters will include clostridia and streptococci, in addition to coliform monitoring.

The Environmental Protection Agency (EPA) publishes a report on drinking water monitoring annually. Overall Results for Westmeath from the most recent report<sup>∞</sup>, from monitoring carried out in 2004, were as follows:

The most serious health issue raised in the report relates to levels of non-compliance for the microbiological parameters, especially faecal coliforms. Faecal coliforms originate in faecal matter, either animal or human, and while non-pathogenic in themselves are strongly indicative of the possible presence of pathogenic organisms that can be responsible for serious waterborne diseases. The bulk of microbiological non-compliances are found in the locally managed group schemes, which are managed and operated by consumers locally, as opposed to the public supplies provided by sanitary authorities.

These group schemes, serving approximately 10 per cent of the population, can be further classified into (a) 'public' group schemes, which receive their water from the sanitary authority and distribute it locally; and (b) 'private' group schemes, which distribute water obtained from a private source, often without any treatment, including disinfection.

Overall Results from EPA's Monitoring carried out in 2004 used analysis that was carried out on 87 check and 18 audit samples during 2004. There was no monitoring carried out in private supplies that supply water as part of public or commercial activities in Westmeath during 2004.

The overall rate of compliance in Westmeath County Council, 98.3%, was above the national average during 2004. Water supplies in Westmeath displayed above average compliance with the chemical and indicator parametric values but slightly below average compliance with the microbiological parametric values public water supplies.

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<sup>∞</sup> "The Quality of Drinking Water in Ireland: A Report for the year 2004", EPA



There were 3 incidents of E. coli contamination in 3 public water supplies in Westmeath during 2004; one in the Athlone and two in the Castlepollard supplies. While the Athlone and one of the Castlepollard incidences were due to the detection of a single E. coli in one sample each, the case in the other Castlepollard supply was detected in follow up samples (at higher levels) and the water was contaminated with E. coli for two weeks before a compliant sample was obtained. The microbiological quality of the 3 private group water schemes was good and all three were compliant with the E. coli parametric value throughout the year.

There were just two exceedances of the parametric values for the chemical parameters in public water supplies in 2004. Both exceedances were with the fluoride standard and were in different supplies. However, both exceedances were less than the EU parametric value of 1.5 mg/l and were not repeated in either supply in 2004. The 3 private group water schemes were fully compliant with the chemical parametric values in 2004. Compliance with the indicator parametric values in both public water supplies and private group water schemes was above the national average during 2004. The sole issue of note with respect to both types of supplies was the relatively low percentage of samples that complied with the parametric value for coliform bacteria (90% and 81% respectively)<sup>∞</sup>.

Lough Owel supplies approximately two thirds of the County with drinking water and for this reason it is imperative that the water quality of this catchment in particular is preserved. A Vulnerability Study was carried out in 2003 to estimate the quality and threats to the quality of this water supply which will inform policies relating to this water supply in the future<sup>∞</sup>. Groundwater is a significant contributing source of water inflow to the lake, providing a conservative estimate of 21% of the overall inputs to the lake. The three aquifers that provide recharge to the lake are the Derravaragh Cherts, the Lucan Formation and the Ballard Gravel, which have been assigned the categories Lm, Li and Lg respectively, i.e. locally important aquifers. An assessment of vulnerability of this groundwater by contaminants, including cryptosporidium, indicates that the preliminary vulnerability ratings across the catchment range between moderate to extreme. Other supplies of drinking water come from Lough Lene and from groundwater abstraction points throughout the County.

## Wastewater Treatment

Westmeath County Council is responsible for provision of a water network serving over 14,000 households and sewerage facilities to over 8,000 premises in the County, with 16 separate sewerage systems in the county<sup>∞</sup>. The effluent from the sewerage treatment plants is monitored by the Council.

According to the 'Wastewater Treatment Plants in the north of the County: Assessment of Performance and Effluent Results' Report produced in 2004 by Westmeath County Council, the performance of the Wastewater Treatment Plants in the northeast of the County were broadly similar to that of 2003 with the exception of Killucan. Killucan improved considerably as a result of the opening of the new plant in April. The Mullingar plant continues to give excellent BOD results, however, the effectiveness of Phosphate removal declined from 95.5 % in 2003 to 92 % in 2004. Results from the smaller housing and amenity plants such as that at Donore, were variable for the most part with Milltownpass not working properly throughout the year<sup>∞</sup>.

The Water Services Investment Programme 2005 – 2007, estimated the total cost of all schemes in the programme at €230m. The following is the position with regard to progress on Capital Schemes in Westmeath during the year 2005.

Schemes completed include the Lough Owel Water Treatment Plant and the Moate Emergency Water Supply Extension.

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<sup>∞</sup> From "The Quality of Drinking Water in Ireland: A Report for the year 2004", EPA

<sup>∞</sup> Westmeath County Council, 'Assessment of Groundwater Vulnerability in the Lough Owel Catchment', 2003

<sup>∞</sup> Ref: National Urban Wastewater Study 2005

<sup>∞</sup> Waldron, John, 'Wastewater Treatment Plants in the north of the County: Assessment of Performance and Effluent Results' Report, 2004 for Westmeath County Council

### **Mullingar Waste Water Treatment Plant**

Population growth projected for Mullingar in particular, will place increasing pressure on the sewage treatment system and this in turn will increase the vulnerability of Lough Ennell and the River Brosna to pollution. To address this situation a new Mullingar Sewage Treatment Plant and 1st Phase of Network Improvement will be in place by the end of 2008.

### **South Westmeath Water Supply Scheme**

Due to increased population growth a new water scheme is proposed to meet demand. This scheme is planned to abstract water from the River Shannon at Killinure Lough and pump the raw water to a water treatment plant at Portaneena. From this water treatment plant, the water will be pumped to reservoirs at Carraun Hill, Annagh, Knockdomney, Coolatore and Rochfortbridge. This scheme will assist in conserving water supply from the Lough Owel source for population growth areas in other parts of the county. It is proposed that the scheme is to be carried out in three phases; short, medium and long-term works.

### **Rural Water Programme**

The rural water programme covers the provision/improvement of water supply in accordance with the Rural Water Strategic Plan.

Provision of new/upgrading of existing Group Water Schemes was allocated €500,000 and "Taking in charge" of Group Schemes, €111,000 in 2005.

### **Small Schemes Programme**

The Small Water and Sewerage Schemes is funded 75% by the DoEHLG. and 25% from the Council's own resources. The Council's allocation from the Department under this heading in 2005 amounted to €750,000.

### **Individual Water Supply Grant**

Grants of up to 75% of the cost of provision/improvement to a water supply to a maximum of €2031.58 are available for domestic water supplies. All grants paid by the Council under this Scheme are fully recouped from the DoEHLG<sup>∞</sup>

The Urban Waste Water Treatment (UWWT) Regulations 2001, in general, prescribe secondary treatment for all wastewater discharges. Appropriate treatment will depend on local circumstances and will vary from simple physical processes to physical/biological or physical/chemical processes with varying performance standards depending on the quality objectives of the receiving waters. More stringent treatment is required for agglomerations discharging to sensitive waters; agglomerations with a population equivalent greater than 10,000 discharging into sensitive waters or the catchment of sensitive waters require nutrient reduction facilities. "Sensitive areas" refer to freshwater bodies that are eutrophic or which may become eutrophic if protective action is not taken; surface waters intended for the abstraction of drinking water which contain more than 50 mg/l of nitrates; and areas where further treatment is required, to comply with other Council Directives.

### **Phosphorous Regulations Implementation Report**

A summary of surface water quality status in Westmeath was given in the third National Implementation Report published by the EPA on the **Phosphorus Regulations** prepared in 2005. The report has been prepared from information and water quality data submitted by local authorities in their Implementation Reports and from water quality data collected by the Agency in the 2001-2003 period.

The report showed that there was one county river with a seriously polluted station in the period 2001-03, ie the River Brosna and this same river had 5 moderately polluted stations. A number of other rivers in Westmeath had moderately polluted stations, eg Riverstown, Moate Stream, Black (Westmeath) and Gaine River.

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<sup>∞</sup> Westmeath County Council, Annual Report 2005

Overall, a small but significant reduction in the level of moderate and serious water pollution was reported. In contrast, there was a marked reduction in the number of monitoring sites with the highest quality unpolluted water. There are not many of these in the first instance. Local authorities were asked to commit resources to protecting these pristine waters as well as the ongoing focus on polluted waters.

The EPA Implementation Report points to a number of specific water quality factors in need of urgent attention. These include agricultural issues such as inadequate slurry storage, effluent discharges during wet periods, over-application and misapplication of fertilisers and overgrazing by sheep. Other problems highlighted include the absence of nutrient removal at inland sewage treatment plants, the impact of forestry, septic tanks, and the effects of the economic boom. The agricultural bye laws that have been adopted as well as the implementation of the River Basin District Management Plans under the Water Framework will be key to addressing these problems.

### **Groundwater Quality**

Groundwater is water that is held underground in the soil, in gravel and in pores or crevices in rock. Groundwaters are of importance as a water source for potable water for private wells, group schemes and local authority supplies and for use in a range of commercial activities from agriculture to bottling water for sale. Westmeath's groundwater reserves are an important natural resource for many reasons. The groundwater source for drinking water as a percentage of total supply is 20% in Westmeath; by comparison to 95% in Laois, 72% in Offaly, 50% in Tipperary North, and 15% in Longford. While the remainder of water supply is from surface water sources, the vast majority of people who are not supplied from public sources also depend on groundwater from group schemes and private wells. In addition, groundwater directly and indirectly contributes to, and sustains a variety of important ecosystems, the most important of which in Westmeath include turloughs; fens, in particular rich fens and flushes; and marl lakes. In many rivers, more than 50% of the annual flow is derived from groundwater and more significantly, in low flow periods in summer, more than 90% is groundwater. In this regard, the quality of groundwater is significant in terms of surface water quality.

Aquifers are geological formations that contain or conduct groundwater from which water supplies for wells, springs, etc. are often abstracted. In Westmeath there are sand and gravel aquifers near Moate, north of Athlone and to the east, and north of Mount Temple. A large gravel aquifer exists to the south of the county at Kilbeggan and the areas of important esker ridges. These sand and gravel aquifers are locally important as sources of groundwater, with the larger ones varying from local to regional importance. A large karstified aquifer exists to the north of the County at Lough Naneagh, which is considered to be a regionally important aquifer. A productive fissured bedrock aquifer that is locally important extends from the County boundary in the north east of the county, under Lough Lene and south west as far as Lough Owel. The importance of these aquifers will vary with their productivity and as such it is essential that aquifers do not suffer from over abstraction, where pumping rates exceed the recharge rate of the aquifer.

The sensitivity of an aquifer to contamination is based on the physical characteristics of the aquifer, the overlying geologic materials, and, for a specific contaminant, its chemical characteristics. "Sensitivity" is a relative term used to describe how well an aquifer is protected from infiltrating contamination. A highly sensitive aquifer would have little or no defence, whereas an aquifer with low sensitivity would be very well protected.

A shallow, unconsolidated sand-and-gravel aquifer is highly sensitive to contamination. This is because the physical characteristics of the aquifer permit rapid infiltration of recharge. Rapid recharge leaves little time for contaminants to degrade naturally or be adsorbed before reaching the aquifer. Conversely, a deep, confined, layered basalt aquifer has a very low sensitivity. Infiltrating recharge could take years to reach the aquifer, allowing time for contaminants to abate or degrade. The quality of this groundwater resource is generally good, though there are some problems with localised contamination of small borehole sources. However, recent years have seen increasing public concern about the risk of

pollution from various sources such as intensive agriculture, industrialisation, septic tanks and landfills.

The sensitivity of an aquifer can vary greatly, depending on geologic conditions. Fractured or faulted terrain tends to conduct recharge much more quickly than unfractured rock because fractures act as conduits for fluid flow. Hence, faulted or fractured bedrock aquifers tend to be highly sensitive. Limestone terrain that has undergone dissolution (dissolving) by groundwater often forms karst topography, which is characterised by sinkholes, caves, and rapid underground drainage. With its many conduits connecting the surface and subsurface, karst terrain makes for a highly sensitive aquifer.

If groundwater becomes contaminated the surface water quality can also be affected and so the protection of groundwater resources is an important aspect of sustaining surface water quality. Once groundwater contamination occurs, the consequences last far longer than surface water contamination (months, years and sometimes decades) because groundwater moves slowly. Remediation is frequently not practical or is very expensive. It is therefore preferable to prevent or reduce the risk of groundwater contamination than to deal with its consequences.

For groundwaters the pressures to be addressed include water abstractions, saltwater intrusion, diffuse sources and point sources. Point source pressures considered in relation to groundwaters include migration of pollutants from contaminated land, waste disposal sites and oil industry infrastructure and discharges to groundwaters from mines and soakaways.

Highly impermeable strata, such as silt and clay, provide a physical barrier above an aquifer. Aquifers that are overlain by thick sequences of silt and clay or unfractured bedrock tend to be less sensitive to surface activities.

Contamination of groundwater is generally attributed to bacteriological contamination from sewage systems including septic tanks and agricultural pollution. In short, vulnerability to such contamination depends on a number of factors:

- The determination of aquifer type is of fundamental importance and is the first task in assessing its qualitative and quantitative vulnerabilities
- Characteristics of the sub-soil and topsoil provide varying degrees of protection to ground waters and are an essential data set in assessing vulnerability. A portion of this data is available in Westmeath the more recent datasets are available from Teagasc.
- Land cover and habitat mapping are also good indicators for this stage in the assignment of vulnerability classifications. Land use directly affects the surface and groundwater environments through processes such as run off, infiltration and abstraction. Four land use types dominate the ERBD; these include agricultural, urban (artificial surfaces) and natural areas (forests and bogs).
- Depth to bedrock and water table are also important factors in the assignment of risk. Data sets relating to these factors are as yet unavailable to Westmeath County Council but will be available when the Geological Survey completes the survey for Westmeath.

Of particular importance to the initial characterisation of groundwater bodies are the 'overlying strata', or the geological materials overlying the water table in unconfined groundwater bodies and overlying the top of the geological unit forming confined groundwater bodies. These strata consist of soils (topsoils) and subsoils such as till, alluvium, lake and estuarine fine-grained sediments, peat and sand/gravel deposits. Identification of the general character of overlying strata is required to enable assessment of potential pathways of contaminants to groundwater, evaluation of the vulnerability of groundwater to contamination and analysis of recharge to groundwater.

The locations where ground waters are being abstracted for use are highlighted in attached map and these areas should be specifically protected from any risks.

The basis of national and European environmental policy is that pollution should be prevented at source. The local authority's planning control system is therefore an important element in

groundwater protection, by ensuring that developments are managed so as to prevent pollutants from entering groundwater. A practical and effective means of protecting groundwater and preventing pollution will be provided by the Groundwater Protection Scheme that is currently in preparation for Westmeath by GSI. This valuable resource is likely to be available during the lifetime of the reviewed Westmeath County Development Plan.

Any groundwaters that are considered vulnerable to pollution or at risk should be considered with sensitivity in formulating policy, especially policies relating to rural housing and industrial development, quarrying and intensive agriculture.

Aquifer Classification	Category	Code
Regionally Important	Karstified	Rk
	Fissured Bedrock	Rf
	Extensive Sand/Gravel	Rg
Locally Important	Sand/Gravel	Lg
	Bedrock - Generally Moderately Productive	Lm
	Bedrock - Moderately Productive only in Local Zones	Ll
Poor	Bedrock - Generally Unproductive except for Local Zones	Pl
	Bedrock - Generally Unproductive	Pu
Pending Classification	Misc bedrock	pending

### Groundwater Risk and Vulnerability in Westmeath

Significant groundwater abstraction pressures or pressures affecting the water balance are caused by industrial or public water supplies. Groundwater bodies associated with dependent surface water ecosystems are considered to be particularly at risk. The groundwater dependent ecosystems in the County are Ballymore Fen (Shannon RBD) and Mount Hevey Bog (in Eastern RBD and whose catchment area within 100 m of arterial drainage). Groundwater Bodies Risk Assessment Results for Abstractions and Saline Intrusions showed that Lough Owel is in the 'probably at significant risk' category.

The significant groundwater diffuse pressures addressed in the risk assessments are nutrients from agricultural activities (including livestock farming, arable activities and intensive enterprises), nutrients from unsewered human populations (septic tanks) and dangerous substances from all land use sectors (including chemicals used in agriculture, chemicals contained in urban run-off e.g. oil/diesel from paved areas, and chemicals contained in household products). Again all surface water bodies associated with the groundwater bodies were considered in the diffuse assessment. The diffuse pressures assessment showed Mullingar town in the 'probably at significant risk' category.

In summary, most of the Shannon RBD area groundwater bodies within Westmeath are considered to be 'probably not at significant risk', or 'not at significant risk'. Mullingar urban area, Athlone urban area, a small area at Coole and a small area between Kilbeggan and Horseleap were considered to be 'probably at significant risk'. The Athlone west urban area was considered to be 'at significant risk' from groundwater pollution'. In the Eastern RBD area, only a small area at Lough Lene and another near Kinnegad were in the 'probably at risk category', with the remaining area being classed as 'probably not at risk' or 'not at risk'.

A Draft interim groundwater vulnerability map has recently become available to Westmeath County Council from the geological Survey of Ireland and the data is shown on the attached map. This shows that groundwaters that are extremely vulnerable to pollution are located to

the north of the County, around Ballymore and the hill of Uisneach and areas to the east of Lough Ree. Highly vulnerable groundwater reserves exist to the south in the area that is particularly rich in geodiversity due to the presence of important esker ridges and to the west from Athlone to Mount Temple. Highly vulnerable areas also exist to the east of the County as shown on the map. The remainder of the County is classed as of 'high to low' vulnerability, since it has not been extensively studied to date.

### **Bathing Water Quality**

The quality requirements for bathing water areas in Ireland are set out in the Quality of Bathing Waters Regulations 1992 (S.I. No. 155 of 1992) and subsequent amendments. These Regulations transposed the requirements of the EC Directive concerning the quality of bathing waters (76/160/EEC), the purpose of which is to ensure that bathing water quality is maintained and if necessary improved so that it complies with specified standards designed to protect public health and the environment.

The parameters which are required to be sampled and analysed under EU Directive (76/160/EEC) are the same as those prescribed under the National Regulations. However, unlike National compliance which includes all parameters, EU bathing water compliance is based on a sub-set of these parameters. The 5 parameters considered for EU compliance purposes are: total coliforms, faecal coliforms, mineral oils, surface-active substances, and phenol. The EPA Bathing Water Quality in Ireland Report 2005 showed that all (three) designated bathing areas in County Westmeath were compliant with National and EU standards.

The new EU Directive 2006/7/EC on bathing water quality came into force on 24 March 2006 repealing Directive 76/160/EEC. Member States have until 24 March 2008 to comply with the provisions of the Directive. The new proposal is intended to deliver general benefits in relation to improved health-protection for bathers and a more pro-active approach to beach management, including public involvement. In terms of monitoring, the new Directive proposes to eliminate the tests for 19 different pollutant parameters and replace them with two bacteriological measurements, intestinal enterococci and escherichia coli, which focus specifically on the protection of human health. Compared with current standards, the proposed standards are intended to provide significantly higher protection against the risk of contracting gastroenteritis and respiratory diseases as a result of bathing.

The new Directive also aims to make more use of modern communication methods, such as the Internet, to inform the public about the quality of bathing waters and thereby allow the public to make a more informed choice on where to bathe. The bathing water quality standards specified in the new Directive are considered tougher than the present Bathing Water Directive.

**The Blue Flag** is a well-recognised, much respected eco-label, awarded to beaches and marinas with excellent environmental management and the system currently operates in twenty four countries. An Taisce which is a member organisation of the Foundation for Environmental Education is the responsible body in Ireland for the administration of the Blue Flag scheme<sup>∞</sup>.

To gain a Blue Flag; a beach must meet 26 criteria and a marina must meet 16 criteria covering water quality, beach/marina management, safety, services and facilities, environmental education and information. The Blue Flag for beaches is only valid during the blue flag season, which coincides with the bathing season (June to August). In addition to compliance with the requirements corresponding to those of the EU Bathing Water Directive there must be compliance with the standards and requirements for sewage treatment and effluent quality such as are contained in the EU Urban Waste Water Directive. There must be no industrial or sewage related discharges affecting the beach area.

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<sup>∞</sup> An Taisce - The National Trust for Ireland, <http://www.antaisce.org>

The Blue Flag awards are presented to beaches attaining levels of environmental excellence as determined by FEEE (Federation for Environmental Education in Europe) and relate to water quality, facilities for visitors, beach management, provision of environmental information and display facilities.

2006 awards for Westmeath were as follows:

- The Marina, Athlone has retained its Blue Flag status, which it achieved three years ago.<sup>∞</sup> It is managed by Westmeath County Council and is located right in the town on the Shannon.
- Killinure Point Marina, Glasson, which is managed by Quigleys and Waveline. It is located on the inner lakes of Lough Ree on the Shannon.

The Cut at Lough Lene, has lost the flag due to inadequate management which resulted in breaches of several criteria found during last summer's inseason inspection. The criteria in question cover environmental management, facilities and provision of information. Vandalism and litter are having a major impact on this bathing area. The Jury could not award the flag to The Cut for 2006 as it does not meet Blue Flag standards.

Lilliput at Lough Ennell has lost the flag due to inadequate management which resulted in breaches of several criteria found during last summer's in-season inspection. The criteria in question cover environmental management, facilities and provision of information. The Jury could not award the flag to Lilliput for 2006 as it does not meet Blue Flag standards.

## Fisheries

Loughs Ennell, Owel, and Sheelin are important and renowned wild brown trout fisheries that attracts tourist anglers from both within and outside Ireland. Lough Derravarragh was managed as a brown trout fishery up to the 1970's. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Lough Sheelin is known for its duckfly and mayfly hatch, whilst Lough Ennell produced the Irish record Lough trout and is noted for its game angling. Loughs Owel, Derraghvarragh and Sheelin also support stocks of course fish.

Fish need unpolluted water and abundant food in a habitat that provides spawning areas, shelter and freedom of movement. The bed and soil of a natural river and the associated aquatic and riparian vegetation combine to provide the food chain on which fish depend. A natural river channel is characterised by the morphological features which are vital for the life cycle of fish: gravel shoals or reed beds for spawning, pools and riffles where fish rest and feed, and turbulent reaches which enhance oxygenation.

Active flood plains are of importance in terms of flood storage and the prevention of siltation of the river channel and as potential habitat for fish and aquatic life. An essential role of the flood plain is to assist in the removal of nutrients from the water column, these nutrients regenerate vegetation in the flood plain, which is of importance to terrestrial species. Siltation of the river channel would have detrimental effects on fish survival as their gills can become clogged with silt, the survival of juvenile fish and fry is affected by suffocation, invertebrate (fish food) populations are also affected in the same way and the result is a decrease in bio-diversity.

Salmonoid Waters, under Directive 78/659/EEC include all waters within the catchment of the River Boyne, including the Riverstown, Deel, Milltownpass, Stoneyford, Kinnegad and Loughs Lene, Adeel, Bane and White. These waters are therefore considered sensitive as a result and it was recommended by the relevant Fisheries Board that they be protected.

Potential Impacts to Fish and Fish Habitat in terms of development include;<sup>∞</sup> barriers to fish passage due to blockages in watercourses either physical or hydraulic and water pollution

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<sup>∞</sup> <http://www.westmeathcoco.ie/services/environment/waterQuality.asp>

<sup>∞</sup> Eastern Regional Fisheries Board, 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites', 2005

due to sedimentation, cement, grout and concrete, or oil and fuels entering the watercourse which will impact on fish, their food and their habitat. The removal of bed material as part of development causes loss of in-stream vegetation and food and may destroy spawning or nursery habitats. The disturbance of riparian or river bank vegetation may result in loss of shelter and cover or loss of food, such as plant debris and vegetation invertebrates.

### **Flood Risk and Drainage**

The effect of global warming is increasing the incidence and severity of flooding and it is therefore increasingly important to take account of flood risk in spatial planning. While flooding is a natural phenomenon of the hydrological cycle, there are many man-made factors that influence flood behaviour, including frequency and intensity and the degrees to which an area can be at risk of flooding. Locating unsuitable development in an area at risk from flooding can lead to property damage, human stress and hardship, problems obtaining property insurance and consequential demands for the expenditure of local authority or central government resources on flood protection works. Any development that reduces the rate of absorption or increases the rate of runoff increases the risk of flooding of lands and properties downstream. The construction of protection works either at the time of the development, or at a later date, will incur additional costs, may not provide absolute immunity from the risk of flooding and can, if not appropriately designed, have detrimental effects on flood risk elsewhere.

Like other natural processes, flooding cannot be completely eliminated, but its impacts can be minimised with proactive and careful management of catchments and identified flood risk areas. Consideration of flood risk and the related impacts of, or on development throughout a catchment, rather than on a location-by-location basis, will facilitate sustainable development through the reduction of future flood damage, and hence reduce the potential economic and social costs outlined above. Development Plans (and subsequent Planning decisions) are key to this approach.

Under the Planning and Development Acts 2000-2006, Westmeath County Council may include in its Development Plan objectives regulating, restricting or controlling development in areas at risk of flooding. The County Development Plan aims to ensure that existing flood risks are either reduced or addressed and that any development does not individually or cumulatively give rise to new flood risk. The risk of flooding should be taken into account in all cases where development is being considered. A flood risk assessment should be carried out where appropriate and planning permission may either be refused or, if granted, can be made subject to conditions requiring the implementation of measures necessary to alleviate or avoid damage due to flooding.

The Office of Public Works (OPW) is responsible at a national/central government level for monitoring and addressing situations pertaining to flooding. A number of flooding related projects are currently underway by the OPW including the facilitation of a governmental review into flooding issues and management. The OPW are also involved in the preparation of historic flooding and flood risk maps. The attached 'Flood Risk' map shows areas and water bodies that experience or are at risk from flooding.

A 'flood envelope' from the 1999/2000-flood event of the River Shannon is shown on the map, which indicates the area inundated by this flood. The aerial photos on which this map is based were taken after the peak of the flood so additional areas that are at a slightly higher level may also have flooded. There may be a small number of islands within this envelope that were not flooded.

'Benefiting Land' is land that is subject to OPW drainage schemes. This land was, prior to the drainage schemes, low lying and poorly drained and probably at risk of flooding. The risk was reduced by the drainage schemes carried out under the Arterial Drainage Act, 1945 (Brosna, Inny, Boyne) but a significant residual risk of flooding remains in many of these areas. The design standard applied for the schemes was the three-year flood i.e. the land could flood once in three years on average after drainage.



'OPW Channels' are maintainable channels. The OPW requests that a 10m strip be retained from the top of the bank on both sides of these channels to allow for maintenance. This strip should not be paved or landscaped in a manner that would prevent access by maintenance plant.

'Drainage District Channels' are maintainable channels under the drainage districts and are maintainable by the local authority. Similar facilities for maintenance as required by the OPW may be appropriate at the discretion of the local authority.

The following lakes are used as buffering reservoirs by drainage schemes – of the Inny Catchment; Lough Kinale, Lough Derragh (Longford), Lough Derravaragh and Lough Iron; of the Brosna Catchment; Lough Ennell and of the Boyne Catchment; Lough Ramor (Cavan). No development, which would be vulnerable to flooding should be allowed within the original extent of these lakes, as defined in the 1900-1920 six inch map series, as water levels may be expected to rise to these levels periodically.

The flood plain is an essential component of the aquatic ecosystem. Active flood plains are of importance in terms of flood storage and the prevention of siltation of the river channel and as potential habitat for fish and aquatic life. An essential role of the flood plain is to assist in the removal of nutrients from the water column, these nutrients regenerate vegetation in the flood plain, which is of importance to terrestrial species. Siltation of the river channel would have detrimental effects on fish survival as their gills can become clogged with silt, the survival of juvenile fish and fry is affected by suffocation. Invertebrate (fish food) populations are also affected in the same way and the result is a decrease in bio-diversity.

The result of reclaiming flood plain areas would be the increased risk of flooding in other areas and flooding of new areas, which may not be as imminently suitable as the natural flood plain.

In general, development in flood plains increases the risk of flooding e.g. areas of land adjacent to the River Shannon, within the identified 'flood envelope'. Development should be restricted in such areas. Development should also be restricted on lands identified as 'benefitting lands' due to the significant flood risk in these areas. No flood-vulnerable development should be allowed within the original extent of any lakes that are used as buffering reservoirs by drainage schemes. Areas adjacent to channels should be reserved for maintenance of any maintainable channels identified.

Flood alleviation and drainage works have the potential to destroy fisheries habitat, but can be performed in a fisheries sensitive manner, if advice is sought from the relevant Fisheries Board. This has particular relevance to the River Brosna and River AI. When a river catchment is drained arterially, the tributaries and the main channel are drained. The aim is to allow water to flow off the land more quickly and to lower the water table in order to curb flooding and waterlogging. This involves physical removal of habitats such as spawning beds, large areas of riverside vegetation, trees, etc. The entire aquatic habitat of some streams may be damaged. Less obviously, the lowering of the water table allows areas distant from a drained river to dry out. In such situations, wetlands, with their characteristic fauna and flora, could gradually disappear.

In the '70s and '80s, some Westmeath river catchments underwent arterial drainage, and the impacts of these schemes are still being felt even thirty years later. The River Inny, which supplies and flows out of Lough Derravaragh, was drained as part of an arterial drainage scheme. Drainage lowered the water table, so that at the western end of Lough Derravaragh, extensive reed beds and swamps have been created, where formerly lake existed. More seriously, however, the drainage could result in major and irreversible damage to Garriskil Bog, allowing it to dry out gradually. The characteristic raised bog ecosystem would then cease to exist. Elsewhere in Westmeath, the lakeshore of Lough Ennell has also expanded as the lake contracted, due to drainage. The Blackwater, a tributary of the Boyne which rises in the eastern part of Westmeath, is still recovering from the effects of the arterial drainage scheme of the '70s, and salmon stocks in the Boyne catchment as a whole have not recovered to the numbers that existed prior to drainage.

No large drainage schemes are in operation now. Small scale drainage of bogs still takes place, although some of the more damaging drains in some sites, such as Garriskil, have now been blocked, allowing the bog to retain water that is vital for preserving its ecology<sup>∞</sup>.

#### **Do-Nothing Scenario**

The non-implementation of new standards or controls in terms of water quality control is not reasonable to consider since this issue is one that has already been determined at a higher policy level; Westmeath County Council is obliged under the Water Framework Directive to implement River Basin Management Plans and other water quality control measures. In this regard it is not an option to allow existing water quality trends to continue unless the trend has been towards an improvement or retention of water quality status

The development of currently zoned but undeveloped lands in Mullingar in particular, without provision for essential upgrading of wastewater treatment capacity would result in increased levels of phosphorous loading into Lough Ennell.

The development of currently zoned but undeveloped lands in Moate without surface water measures would result in flooding in Moate.

The continuation of use of SR6 standard recommendations published by the National Standards Authority of Ireland in 1975 (revised in 1991) which aimed to achieve satisfactory practice in the design, construction and maintenance of septic tank drainage systems, as opposed to using the more recently published Wastewater Treatment Manual, 'Treatment Systems for Single Houses', by the Environmental Protection Agency, as reviewed in 2003, would result in a continued use of out-dated standards.

In terms of flood risk, current Development Plan policy is insufficient to deal with development pressures over the coming years. Continuation of use of this policy would therefore be ineffective in ensuring that new development does not contribute to or exacerbate the effects of flooding. The result could be therefore that development that is vulnerable to flooding could be allowed in unsuitable areas, which could increase flood risk and impact upon sensitive habitats and result in damage to property and human health.

#### **4.2.4 Air and Climate**

##### **Air**

Section 4 of the Air Pollution Act, 1987 defines Air Pollution as follows "a condition of the atmosphere in which a pollutant is present in such a quantity as to be liable to be injurious to public health, have a deleterious effect on flora or fauna or damage property, or impair or interfere with amenities or with the environment."

Local Authorities have various powers under this Act including the issuing of notices under Sections 26 & 27 requiring measures to be taken to prevent or limit air pollution.

Emissions from road traffic are now the primary threat to air quality in Ireland (EPA, 2000). Nitrogen Oxides (NOx) arise from traffic emissions or any combustion process (e.g. incineration). Particulate Matter (dust) from heavy goods vehicles (HGVs) may have localised effects on air quality. Carbon Monoxide (CO) and Benzene mainly arise due to petrol combustion. Sulphur Dioxide (SO<sub>2</sub>) also arises from diesel engines including HGVs.

Emissions to air can also arise from waste management and this can be either due to direct emissions (landfill, thermal treatment, composting, anaerobic digestion) or indirect emissions (transports associated with waste collection or disposal). Types of emissions include landfill

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<sup>∞</sup> Hickie, 'Nature in Westmeath, A Wildlife and Habitat Guide', 2005

gas (methane, carbon dioxide), dust (including bioaerosols from composting), odour and noise.

Overall air quality in the Midlands Region is within EU limits (for Sulphur dioxide, Nitrogen Oxides and particulate matter. Air quality monitoring is carried out by the EPA and by the Local Authorities at Mullingar and Athlone for the region. At these sites SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> levels were within EU limits in recent reports<sup>∞</sup>. However Nitrogen dioxide and Particulate Matter are the air pollutants of concern due to levels occasionally exceeding EU limits in heavily trafficked areas.

Methane is one of the major greenhouse gasses responsible for climate change and has 21 times the global warming capacity of carbon dioxide. Under the Kyoto Protocol Ireland must meet targets to reduce greenhouse gases by 2013. Landfill gas is a significant source of methane and CO<sub>2</sub> and facilities are required to have gas management systems in place as a condition of their licence.

## **Climate**

The Midlands overall has an average rainfall of 800-1000mm per year, which can rise to 1600mm in the higher mountainous areas. The region gets approximately 175 days of rainfall annually and 1400 hours of sunshine. A weather summary produced by Met Éireann for 2003 for County Westmeath showed that in Mullingar total rainfall was 737.7 mm, average temperature was 9.8 °C and the average daily sunshine was 4.35 hours. The prevailing wind in Ireland is from a quadrant centred on west-southwest. These are relatively warm winds from the Atlantic and frequently bring rain. Easterly winds are weaker and less frequent and tend to bring cooler weather from the northeast in spring and warmer weather from the southeast in summer. The effect of global warming is increasing the incidence and severity of flooding and it is therefore more important to take account of flood risk in spatial planning.

### **Do-Nothing Scenario**

Continuation of recent trends in road building and the continued lack of adequate public transport services would encourage unsustainable transport patterns resulting in a continued trend of air pollution and climate change, which would act as a barrier to meeting our obligations under the Kyoto Agreement<sup>∞</sup>.

## **4.2.5 Geology, Soil and Material Assets**

Material assets are taken to be infrastructure including settlements (towns and villages etc.), buildings and infrastructure, transport infrastructure and utilities as well as natural assets such as aggregates, geological formations, peatlands, watercourses and landscape. Many material assets and environmental elements such as cultural heritage, including architectural and archaeological heritage, landscape, biodiversity, flora and fauna have been identified as being worthy of protection or conservation or are valued for their amenity value or other qualities. Westmeath also holds a very significant material asset in its water resources including rivers, lakes and canals that are invaluable in terms of amenity and tourism potential as well as essential for the supply of suitable water for drinking. Any material assets that are not described in detail in this section are described in more detail in other sections of this report.

## **Soil**

Soil is a biologically active complex mixture of weathered minerals, organic matter, organisms, air and water, which provides the foundation for life in terrestrial ecosystems. Soil however, is not merely the sum of minerals, organic matter, water and air but a product of their interactions. It can be considered a non-renewable natural resource because it develops over very long timescales. A soil is distinguished from weathered parent material by the vertical differentiation it exhibits due to biological activity, so that the properties that are singled out in most systems of soil classification must be displayed in the soil profile.

<sup>∞</sup> Pilot Strategic Environmental Assessment of the Proposed Replacement Midlands Waste Management Plan for 2005-2010

<sup>∞</sup> National Climate Change Strategy, 2000

Westmeath contains a range of soils, which support various habitats, and land uses and provides valuable mineral resource potential. These soils can be impacted upon by water quality. According to the National Soil Mapping Project<sup>∞</sup>, Westmeath is predominantly covered by Acid Brown Earths/Brown Podzolics (AminDW) and Grey Brown Podzolics/ Brown Earths (BminDW). These soils are deep well drained mineral soils, and have medium to high organic matter content for the most part (Brown Earths) and are good all-purpose soils. The Acid grey Earths are normally of lower nutrient status but are generally good arable soils and can support high quality grassland nonetheless<sup>∞∞</sup>. Some surface water gleys and ground water gleys (AminPD and BminPD) are located to the north west and north east of the county and around in the flood plain of the Dungolman river west of Moyvoughly. This soil is deep poorly drained material and are generally considered to be relatively productive soils for forestry. However despite their physical shortcomings, they can have high potential for pasture production with good management and manuring. Much of the remaining area of the County is cutover or cutaway bog or fens. Cutover bog can potentially be reclaimed and used for grazing. Intact bog and fen sites are protected under EU designations in areas throughout the county for their biodiversity value and important natural heritage features, (see section 4.2.6 and the later part of this section entitled 'Peatlands').

### Waste Management Facilities

Westmeath County Council operates in accordance with the Midlands Waste Management Plan 2005-2010, which follows the principles of the 'reduce reuse recycle' campaign. A waste management hierarchy promotes, in order of priorities; 'Prevention and Minimisation', 'Material recovery (recycling/recovery)', 'Energy Recovery' and lastly 'Safe disposal' to landfill.

Within Westmeath, Ballydonagh Landfill, near Athlone is in operation. Marlinstown landfill near Mullingar has been closed. There are also a number of old, disused landfills within the County, some of which have been taken up for other uses and which are not causing any significant impact on the environment but some monitoring will be undertaken. Next year the EPA will be starting to look at these, under the latest EU Directive, 2007 – 2008. A Hazardous Waste Facility operated by Soltec is located at Mullingar Business Park, Mullingar, County Westmeath. A full list of Waste Licences granted can be seen in Appendix Three of this report.

The current status of Ballydonagh landfill is that at current filling rates there is 3 years capacity remaining. Westmeath County Council has applied for an extension, which will provide capacity until 2011<sup>∞</sup>.

A key issue is contamination due to leachate (liquid effluent from waste) where facilities are unlined. A leachate collection system in place to manage this issue. Surface water is monitored upstream and downstream of the site and on a drainage channel. Results indicated no affect on the local surface water. Groundwater Quality and Vulnerability tests showed some elevated ammonia, zinc and magnesium levels in 2003. A locally important aquifer exists at the location, which is generally moderately productive in local zones .

A temporary landfill facility was also operational at Marlinstown, near Mullingar which will be replaced by the purpose built Civic Amenity Recycling Centre, in Clonmore Industrial Estate, which is scheduled for completion in September 2006. Stage 1 of Marlinstown Landfill Restoration Final Capping work has been completed

Air Quality monitoring at this location showed that there were elevated CO<sub>2</sub> levels at certain locations, consistent with the migration of small volumes of gas away from the fill area. Landfill gas (LFG) is produced during the breakdown of organic components of waste by anaerobic bacteria with methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) (in the ratio of 3:2). Both are greenhouse gases and methane in particular is a major contributor to global warming.

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<sup>∞</sup> Teagasc, EPA Soil and Subsoil Mapping Project, 2006

<sup>∞∞</sup> National Soil Survey of Ireland, Soils of County Westmeath, 1977

<sup>∞</sup> Midlands Waste Management Plan, Environmental Report, 2005

Gas collection systems can be put in place, to minimise the risk of gas migration, however two of the licensed facilities did not have LFG collection systems in place. Particulate Matter (dust) can also arise, however no exceedances were reported. Odour from landfill can be a cause of environmental nuisance, however there were no complaints from the public in 2003 in relation to odour or noise from Ballydonagh landfill.

It is estimated in the Midlands Waste Strategy 2005 that there could be up to 14,000 tonnes of waste in the Midlands Region that is unaccounted for, i.e. it is not arriving at a waste treatment or disposal facility. This waste is possibly disposed of illegally by burning or dumping. The EPA estimates that 93g of dioxins were generated in Ireland in 2000. Of this almost 73% were generated by uncontrolled burning. The main activity is illegal 'backyard burning'. Future dioxin emissions are predicted to increase to 110g in 2010. Dioxin levels in the Midlands Region are unknown, however levels are considered a problem on a national scale.

Illegal dumping in disused, or even currently used pits, is a constant problem. Since the polluter-pays principle has been introduced into Ireland, and households must pay for waste services, an increase in illegal dumping in pits has resulted.

Disposal wastes (farmyard or household) directly into the eskers, or onto the land on esker soils, is dangerous as the sand and gravel material is so porous, and contaminants can enter the groundwater quickly and contaminate the groundwater table and nearby wells. Problems include runoff from farmyards, septic tank systems and landspreading

Civic Amenity Centres are located throughout the County and the increase in usage of the two recycling centres continued with over 1,000 tonnes of recyclable material accepted in Athlone Civic Amenity Centre in 2005 with 20,562 visitors to the facility.

Overall 14,000 blue recycling bins have been delivered free of charge to the councils domestic customers. This delivery was accompanied by a major public awareness campaign and there has been a positive response from the customers of Westmeath County Council. An excellent quality refuse collection service was provided during 2005 and this resulted in a very low level of customer queries or complaints.

A pilot organic brown bin scheme was introduced to approximately 1000 householders in Mullingar during 2006. The purpose of the brown bin is to reduce the materials in your refuse bin and send your organic waste to produce a useful compost.

Environmental awareness is regarded by Westmeath County Council as a basic foundation of waste prevention and minimisation. Awareness initiatives are run on an ongoing basis.

Awareness Initiatives carried out in 2005 included:

- School & Community Visits (47 held in 2005)
- Teacher Seminar
- Green Schools Programme (48 registered in 2005)
- Race Against Waste 'Small Change' Business Waste
- Seminar with Athlone Chamber of Commerce<sup>∞</sup>

The Litter Management Plan for the county is currently being reviewed. This includes objectives for increased awareness and education.

## **Road infrastructure**

A very significant road-building programme has been taking place in the county over the past few years and is continuing currently. National routes running through the county include the N52, N62, N55 and N6 and recent motorway (M4) and dual-carriageway (N6) developments underway. These roads are national roads connecting opposite ends of the country but they have very significant implications for the county in terms of the landscape changes that have

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<sup>∞</sup> [www.westmeathcoco.ie/services/environment](http://www.westmeathcoco.ie/services/environment)

been brought about, the farmland that has been used up and the local aggregate deposits that have gone into their construction. These developments have also made the county more accessible and permeable. However they also facilitate travel by private car, which has implications for air quality and Irelands obligations in terms of meeting agreements under the Kyoto Protocol.

### **Rail network**

The towns of Mullingar and Athlone are positioned on the Dublin/Sligo and the Galway/Dublin/Westport rail lines respectively. Trains operate on each route several times daily. Currently there are no other train stations operating within the County although disused stations exist on the Dublin/Sligo line. In addition a potentially significant disused rail line exists from Mullingar to Athlone that could potentially service Moate and its catchment. The re-opening of this line has been considered by stakeholders involved due to the potential to create an important link between the Gateway towns of Mullingar, Athlone and Tullamore; Athlone and Tullamore on the Dublin Galway rail line and Mullingar on the Dublin Sligo line. In addition this would offer interconnection for travellers between these two mainline routes and be a particularly attractive option for commuters into and out of Dublin. The reopening of this line, which was closed in 1987, was considered in the Strategic Rail Review undertaken by Booz Allen Hamilton. Rail infrastructure, while influencing the landscape and landuse in the County, has the benefits of facilitating more sustainable forms of travel and the improvement of this material asset will have far reaching benefits to the environment long term.

### **Forestry**

Forestry has not been a significant feature in Westmeath to date. While small forested areas are dotted throughout the county a large proportion of these have been coniferous, not native forms. Non-native conifers were the logical choice for the plantations from the 50s onwards, since they thrived on the poor land that was available for forestry. However this type of forestry results in greater levels of acidification than native forms causing diffuse sources of water pollution as well as ecological change.

In recent years, and as better land has become available, there has been a slowly increasing emphasis on planting broadleaves, and Westmeath has one of the highest planting rates of broadleaves in the country. The species of trees planted has a bearing on the wildlife species that can exist in association with them, but the way that plantations are managed has an even greater effect. Some conifer plantations have developed into interesting wildlife habitats, particularly where they are mixed with broadleaves, where areas have been left unplanted within the plantation and where some of the main crop has been allowed to grow undisturbed. Large scale harvesting has a huge impact on wildlife, so the emphasis now is on minimising this impact through the adherence to environmental guidelines on harvesting.

Under the Irish National Forest Standard, 2000, all private afforestation projects now have to conform to a suite of environmental guidelines in order to be given consent. Under these guidelines hedgerows, wetlands, stream banks and existing woodland have to be retained and protected. Up to 15% of the plantation has to be set aside as open space and the retention of existing habitats<sup>∞</sup>.

### **Eskers**

The geology and geomorphology of Westmeath is characterised by limestone bedrock and extensive eskers and moraines particularly in the south of the county. Eskers are long, sinuous hills of sand and gravel that were deposited by rivers running under glaciers when Ireland was emerging from the grip of the last Ice Age. In Ireland, they were features unique to the Midlands. Traditionally, eskers were used as routes through bogland areas that were difficult or impassible by foot or horse.

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<sup>∞</sup> Hickie, *Nature in Westmeath, A Wildlife and Habitat Guide*, 2005

While eskers cover only a small part of south Westmeath, they provide the county with an extremely rich and valuable heritage. There are three esker systems of international importance, eight systems of national importance and substantial areas of good quality semi-natural esker habitats within the County. The Split Hills and Long Hills Esker is considered to be the best example of an esker in Ireland. It traverses the main Galway-Dublin Road, (the N6) mid-way between Kilbeggan and Tyrellspass. This esker has been designated a Special Area of Conservation, (see description below under Resources of Heritage Value). Part of the 'Split Hills/Long Hill' esker, which is of international scientific importance is publicly owned and thus allows for the development of public access. Other examples of eskers are Rahugh Ridge in the south of the County, which is covered for almost its entire length in woodland and contains some rare trees and shrubs and Murphy's Bridge Esker adjoining Rahugh Esker, which is cut by the Kilbeggan branch of the Grand Canal and is rich in wild flora.

The Council have undertaken an Esker Survey of the County, which has identified

- The nature, extent and condition of eskers
- The conservation value of each of those Esker Systems

This survey has shown that overall, there are 46 esker systems in Westmeath, covering 1,681 hectares or 0.91% of the area of the County. Esker density is greatest in the south of the County with some eskers extending into Offaly and Galway. The Esker survey that has been carried out for the County has shown that Westmeath eskers support 37 habitats and over 200 plant species<sup>∞</sup>.

The eskers can be subdivided into two groups with respect to their form, or geomorphology. These are the multi-crested profile, and the single crested profile.

Multi-crested eskers are usually wide, hummocky and have haphazard surface forms as they are formed from a number of joined-up ridges. Therefore, these may have a number of summits, shoulders, backslopes, footslopes and toeslopes forming individual ridges, which interconnect with discrete or complex humps and hollows across the overall esker area. The Mount Temple esker, with its hummocky surface and interspersed kettle holes, is an example of a multi-crested esker. Single crested eskers have a straightforward profile, comprising one ridge with a summit, shoulder, backslope, footslope and toeslope. The Rahugh Ridge is an example of a single-crested esker.

The eskers of Westmeath show stunning examples of the large number of esker systems that are distinctive landforms in the landscape of the Irish Midlands. The fact that they illustrate subglacial drainage of ice during the last deglaciation from two different ice sources, which moved in different directions, is somewhat unique.

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<sup>∞</sup> Tubridy, 'County Westmeath Esker Study', for Westmeath County Council, 2006



The eskers vary in height, size and profile type from low, voluminously-small, single crested eskers to high, large, multi-crested eskers. Compare the Bellfield esker (2 segments, single-crest; 5m-6m high; 150,000 tonnes of sediment deposited) with the Streamstown esker (19 segments, complex single to multi-crested; up to 10m high; 10 million tonnes of sediment deposited). A conservative estimate for the volume of material deposited by the glacial meltwaters in the Mount Temple esker for example, in County Westmeath alone, is 30 millions tonnes of sediment. The Mount Temple esker system, comprised of only four segments, covers an area of almost 2 square kilometres. Parts of the Mount Temple and Streamstown eskers have up to three individual ridge crests side-by-side in the esker. In fact, the geometry of the Streamstown esker is so complex that it is difficult to separate individual crests, humps and hollows from each other. This reflects a highly dynamic environment at the base of, and at the edge of, the glacier in that area.

The resource value of these eskers is exceptional. This is an extremely important educational resource and is reflected in the fact that many glacial geologists from abroad have studied the eskers of Westmeath. The volumes of sediment show clearly the power of the meltwater at the base of the ice. Their internal structure (bedding and size of clasts) provides a detailed record of fluctuating meltwater flows over time. Many geology and geography departments from Irish Universities, as well as Universities abroad (e.g. University of Sheffield, University of Amsterdam, University of Stockholm), visit these eskers with students for teaching purposes, and to carry out geological research, on a regular basis.

In terms of 'geodiversity' interest, Cullinamayor Hill, Split Hill, the Clara esker and the Rahugh Ridge esker systems are especially important in their conservation value with respect to interpreting meltwater flows at the end of the last glaciation in the Irish Midlands. Three of these four systems are high, long and continuous over a distance of tens of kilometres, and the Clara and Rahugh systems in their entirety extend into counties Offaly and Galway along distances of over 60 kilometres each. This in itself is remarkable, but the fact that the three systems converge into a single point in County Westmeath, which is a triangular area of sand and gravel in Garryduff and Monrath townlands at the edge of Derrycoffey bog, means their geometry is particularly special. These three eskers have been cited as sites of National



Importance with respect to the last Ice Age, by the Geological Survey of Ireland's Conservation of Geological Heritage Expert Panel for the Quaternary theme. They may, during the assessment phase of the process, achieve a ranking of International Importance.

Tunnels in which the Mount Temple, Horseleap, Race Course, Kilbeggan and Cappalahy esker systems were deposited also all fed into this triangular area at Garryduff-Montrath to their east. From this, these eskers are also of interest as they comprise smaller 'tributaries' within the overall subglacial esker 'river' system.

Of the eskers trending north-south, the Streamstown esker is of particular geodiversity interest, purely for its complex form and geometry. It includes portions which are single crested, multi-crested, has in places several esker segments side by side, esker segments that 'emerge' out of the high hill to its east, anastomosing patterns (i.e. criss crossing and forming a network), interspersed dry kettle holes, interspersed flooded kettle holes, individual flanking kames and also adequate exposure in disused pits and scars in order to study its internal form and soils.

As well as being of importance for geodiversity and biodiversity, the eskers define the local landscape. In landscape terms they provide a striking imprint of the glaciers last actions at the end of the last Ice Age; a footprint of the drainage system at the base of the ice. The landscape importance of eskers and their obvious potential for tourism, education and scientific interests has resulted in suggestions to establish a Geopark in the Irish Midlands to utilise these unique resources.

Eskers also contain significant reserves of water and are classified as 'locally important' aquifers by the Geological Survey of Ireland. Where they connect with other sand and gravel areas they may host enough water to be able to supply regional water supply schemes and many households obtain their water supplies from such aquifers. However as well as being important sources of freshwater, they are classified as 'extremely to highly vulnerable' to groundwater pollution because their constituent sands and gravels are very porous.

Intact eskers are now rare as many have been exploited for their readily available supplies of sand and gravel, for land reclamation in the 19<sup>th</sup> century and for construction in the 20<sup>th</sup> and 21<sup>st</sup> centuries. Some eskers in Westmeath are still being quarried for this purpose. While harvesting these reserves as a source of aggregate to the building industry may offer a solution for major building projects in the short term, the long term implications of the exploitation of this non-renewable resource can result in loss of landscape character, and irreversible impacts to the biodiversity and scientific value of the geological systems involved.

Extractive industries and quarry developments have already removed or seriously injured the geodiversity and biodiversity value of a number of valuable features in the County. The Mount Temple esker for example, already hosts two such industries.

In conclusion, the eskers in the area of County Westmeath provide wonderful and unique scientific examples, which offer exceptional aesthetic, recreational and educational value. The sites are important in this sense geologically, archaeologically, historically, culturally and ecologically. They are therefore considered highly sensitive to injurious forms of development.

## Peatlands

Peatlands are a very characteristic habitat in Co. Westmeath, with raised bogs being a prominent and typical feature in the landscape. They presently account for about 9% of the total area of the county, although the original extent of peatland was over 20% of Co. Westmeath<sup>∞</sup>. Peatlands are important from many perspectives. They have been a source of turf for domestic fuel for centuries. Since the 1940s, the industrial peat harvesting industry has been a key factor in the economic development of the county. Peatlands are a huge repository of information of past climate and vegetation and contain valuable archaeological information.

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<sup>∞</sup> Fossett, J. 'A Guide to Habitats in Ireland', The Heritage Council, 2000

The ecological value of peatlands is also recognised in European terms and various categories are protected under the EU Habitats Directive (EC Council Directive on the Conservation of natural Habitats and Wild Flora and Fauna, Directive 92/43/EEC). Active Raised Bog is listed as priority Annex I habitat and has the highest protection. Degraded Raised Bog that is still capable of regeneration and Alkaline Fens are also Annex I habitats. Species found on peatlands that are protected under Annex II of this Directive include the otter (*Lutra lutra*), marsh fritillary butterfly (*Euphydryas aurinia*) and the whorl snail (*Vertigo geyeri*). Peatlands provide habitats for a range of birds such as Greenland white-fronted goose (*Anser albifrons flavirostris*), merlin (*Falco columbarius*) and golden plover (*Pluvialis apricaria*). These are listed for protection under Annex I of the EU Directive on the Conservation of Wild birds (79/409/EEC).

Exploitation of peatlands has been much greater in other countries in mainland Europe over the centuries. Ireland is fortunate to have still a relatively large peatland resource. Ireland contains a significant percentage of the intact raised bog resource remaining in Europe and has some of the best examples. However, development pressures on raised bogs are intense and as a result they are in steady decline especially for the past 50 years. With good planning it is possible to protect the best of what is left, restore areas that are capable of regeneration and facilitate degraded bogs for new habitats and uses. The main threats are as follows.

Peat extraction has been the greatest cause of loss and deterioration of peatland habitat. In recent times, since the 1940s, the greatest loss of bog habitat is due to large-scale industrial peat extraction for energy production and to a smaller extent for horticulture. Drainage is a prerequisite for industrial peat extraction and this is where the damage is done at the early stages. Of the 19 Bord na Mona-owned bogs in County Westmeath, 17 are in active peat production, one is in the early stages of peat production and only one (Derryarkin bog) is fully cutaway. Its new use will be for extraction of sand and gravel which occur beneath the former bog.

Afforestation on peatland destroys the original habitat through drainage, tree planting and establishment and often nutrient enrichment due to fertilizer application. Conifer plantations are a common occurrence on bogs. Since the establishment of Coillte, the semi-state forestry company in 1989, the rate of forestry activity has increased, driven by EU grant aid, which has also encouraged private afforestation. Approximately 2,200 hectares of Coillte lands in County Westmeath are on peat. Both the Forest Service and Coillte are applying the concept of sustainable forest management practices. Most of the afforestation on peat is now on cutover or already degraded bogs as the deeper, wetter peat is less suitable for growing conifers.

Small-scale illegal dumping of waste is widespread in areas of cutover bogs and along access roads and tracks to bogs. This typically includes domestic, agricultural, builders' rubble, construction waste and old cars. It is unsightly and there is the risk of nutrient input to the peatland water supply. Under the Waste Management Act 1996, landowners are responsible for any dumping on their lands. Westmeath County Council has a policy to trace owners of land where there is illegal dumping, but it is often difficult to trace owners of bog land which may be held in commonage.

The Material Assets map attached shows the following categories of peatland:

Intact bog ('unexploited bog') - Remaining viable intact raised bog is an internationally important habitat. Active raised bog is listed as a priority Annex I habitat under the EU Habitats Directive and should be legally protected.

Cutover bog ('exploited bog') can give rise to a range of habitats, depending on the condition of the peat and its hydrology. Further work will need to be done to classify the cutover to see if it is capable of bog regeneration. Degraded bog capable of restoration to raised bog is also an Annex I habitat under the Habitats Directive.

Cutaway bog ('exploited bog') - Most of the cutaways which are being exploited for industrial peat production are still being harvested. Peat harvesting is ongoing and may continue for

up to 30 years depending on the depth of peat still remaining in the bog and the demand for the product. Finally when extraction ceases, cutaway bogs represent a huge natural resource for future use.

Fen - Many fens are in serious danger. They are often small sites or marginal to raised bogs or waterbodies. So many of them have already been lost through drainage and land reclamation for agriculture.

#### **Do-Nothing Scenario**

The 2002-2008 Development Plan policies in relation to quarrying and the extractive industries do not firmly exclude such development from areas of geological or geomorphological importance due to a lack of supporting data. The information has since been collated through an Esker Study and without the integration of this information into policy; additional extractive industries or quarry developments in important esker systems may be permitted.

Since the Midlands Waste Management Strategy automatically becomes part of the County Development Plan, continuation of waste policies in the existing plan without taking account of the Strategy is not a viable option.

Many intact bogs and fens of conservation value are preserved through European designations, however there are areas of intact bog that are not formally protected and these may come under pressure for development.

Continued policies of road building and a lack of adequate public transport facilities has been discussed above in section 4.2.5

#### **4.2.6 Biodiversity, Flora and Fauna**

Biodiversity can be defined as the variability among living organisms including terrestrial, marine and other aquatic ecosystems. Loss of biodiversity reduces an ecosystem's ability to recover from natural or human impacts. Biodiversity can include diversity within species, between species and of ecosystems and is often discussed under the headings habitats and species. In Ireland there are a number of categories of protected areas for the conservation and protection of flora and fauna. These are outlined below:

Sites of International Importance include; Candidate Special Areas of Conservation (cSACs) protected under the EU Habitats Directive (92/43/EEC), established for the conservation of natural and semi-natural habitats and species of flora and fauna and; Special Protection Areas (SPAs) for the protection of birds were established under the Birds Directive of the EU in 1979. Sites of national importance are proposed Natural Heritage Areas (pNHAs) and are designated under the Wildlife (Amendment) Act 2000. The pNHA's, cSAC's and SPA's in the County are listed in Appendix Four and are shown on the attached natural heritage map.

In addition to the protected sites referred to, biodiversity also relates to species, habitats and ecosystems that are not designated, but that may still have biodiversity value.

The details of Westmeath's natural heritage in terms of biodiversity, flora and fauna is listed below by habitat type, as recommended during the scoping stage of SEA. The habitat types are taken from 'A Guide to Habitats in Ireland', by J. Fossitt, for The Heritage Council, 2000.

#### **Freshwater**

Residents and visitors alike identify Westmeath by its beautiful lakes. Lough Ree is the third largest lake in Ireland and is shared between Westmeath and neighbouring counties Roscommon and Longford. There are four other large lakes, Loughs Ennell, Owel, Derravaragh and Sheelin and a larger number of small lakes. The larger lakes are noted for their waders and wildfowl, while nearly all of the county's lakes are valued as trout fisheries.

Most of Westmeath's lakes are part of the overall Shannon catchment which includes the River Inny and the River Brosna. Lough Lene and Lough Bane are part of the River Boyne catchment.

Westmeath's lakes and rivers are rich in aquatic life, but the areas surrounding them, the lake shores and river banks, are also vitally important for sustaining the entire ecosystem. River banks and lakeshores tend to have more natural or wild vegetation, which is valuable in itself and important for the species of animals that live there. This natural vegetation sustains a host of invertebrates, such as mayflies, stone flies, caddis flies and dragonflies that can be seen dancing above the water in spring and summer, on which fish, amphibians and birds feed.

Many of these water resources have been afforded protection as National Heritage Areas, Special Areas of Conservation or Special Protection Areas as described below and in Appendix Four.

Lough Ree is considered a national treasure and about one third of the lake lies within Westmeath. The shoreline is heavily indented, with sheltered bays and inlets, and can be accessed by a number of usually narrow roads. All of the shoreline is part of the Lough Ree Special Area of Conservation, underlining its importance for a rich variety of wildlife. The lake has 52 islands of varying sizes, and nearly all of them have some woodland cover. Since the islands are now for the most part uninhabited, they are important wildlife refuges, relatively free from disturbance, especially for ground-nesting birds.

Common Terns nest on some of the islands, a species listed on Annex I of the European Birds Directive. The lake provides an excellent breeding habitat for wildfowl, including Common Scoter, a rare breeding species listed as "Endangered" in the Red Data Book. Otters, rarely seen, are also present.

The lake itself contains one of only two populations of the endangered fish Pollan (*Coregonus autumnalis*), which resembles a herring in size and shape.

The flora is as varied and interesting as the fauna. Among certain rare or protected species are Narrow-leaved Helleborine (*Cephalanthera longifolia*) and Betony (*Stachys officinalis*) found in Hare's Island. Buckthorn, a native tree which is uncommon in Ireland can be seen on the lake shore.

White Lough, Ben Loughs and Doo Lough are four lakes that nestle in a shallow valley in the north of the county, a few kilometres north of the historic village of Fore. Botanically, the lakes are interesting because their beds are carpeted with a mat of stoneworts, which resemble water weeds, but are in fact large algae. The stoneworts are encrusted with white lime deposits from the calcium-rich water, giving them a crusty texture (from whence the name 'stonewort' comes). This abundance of stoneworts is unusual because they are vulnerable to pollution and disturbance. Some of the species are listed in the Red Data Book. The lakes are also home to the White-clawed Crayfish, now scarce and protected under the Wildlife Act and Habitats Directive.

Lough Derravaragh fed by the River Inny, which also drains the lake on its way to Lough Ree. The lake is an important site for wintering geese, swans and diving ducks. A flock of Greenland White-fronted Geese use the lake for roosting. At the western end of the lake, there are extensive reed beds and swamps. The swamps are dominated by sedges and other flora including Nodding Bur-Marigold (*Bidens cernua*) and Trifid Bur-Marigold (*Bidens tripartita*). At the south-eastern end of the lake, Knockeyon and the other hills support native deciduous woodland.

Further information of Westmeath's lakes is given in the lake management section of the County Development Plan and in the attached Appendix in relation to their conservation status.

The Royal Canal flows through Westmeath and this stretch was constructed between 1805 and 1830. Although it was not originally intended, the canal has become an important nature reserve as well as a boating thoroughfare. The water is relatively unpolluted and the structures built along the canal have become naturalised into the countryside. The canal boundaries have developed into hedgerows and scrub woodland and the banksides have evolved into little floral oases, free from herbicides and intensive management. The channel itself is fed from clean feeder streams and has been colonised by coarse fish, including Rudd,

Bream, Perch and Pike. Frogs and Smooth Newts are also present. Where the canal bridges have become enveloped with vegetation, they provide nesting and roosting spaces for birds and bats. Kingfisher, Grey Wagtail, Moorhen, Mallard, Mute Swan and Heron are the most commonly seen birds on the water, while the range of wildlife that also inhabits marshes, scrub and hedgerows can be seen along the banks and the canal boundaries.

### **Zebra Mussels**

Zebra mussels are one of the biggest invasive pests in the world's freshwaters. In 2002 a list was created of the world's one hundred worst invasive species which were chosen according to their adverse effects on biodiversity and zebra mussels (*Dreissena polymorpha*) are on this list. Zebra mussels can cause system-level changes in the ecology of rivers and lakes and lead to the extinction of many aquatic species in those. The zebra mussel also has the capacity to block in-flow pipelines that carry water through industrial facilities costing thousands of euros in maintenance and repair each year.

A review is being carried out by a Westmeath MA student on the effectiveness of the zebra mussel awareness campaign as carried out by the Western Region Zebra Mussel Control Initiative (WRZMCI). This study includes a comparison between a survey in the west of Ireland where an awareness campaign that has successfully kept zebra mussels out of four Loughs that are surrounded by infested waters and a survey of the area around Lough Sheelin (no campaign but zebra mussels present) and Lough Ennell (no campaign and no zebra mussels present) to ascertain the effectiveness of the campaign. Zebra mussels have been invading connected waterways throughout the country but for the first time, zebra mussels have recently been recorded outside connected waterways in Lough Derravaragh<sup>∞</sup>.

Through its development of a management strategy this study will contribute towards the protection of County Westmeath's local biodiversity.



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<sup>∞</sup> *Waterways Ireland* - <http://iwn.iwai.ie/v30i4/waterwaynews.PDF>

## Grassland and Marsh

The Shannon Callows, on the floodplain of the River Shannon south of Athlone town, is a unique wetland resource in the Irish Midlands of international importance and has been afforded EU Designations of SAC and SPA in this regard. The River Shannon flows alongside Westmeath's western border south of Athlone, for 7 kms. In the winter months, as the river swells with the winter rains, it floods the grassland alongside. This large expanse of shallow water welcomes thousands of wintering waterfowl and waders every year, including Whooper Swan, Bewick's Swan, Wigeon, Golden Plover, Lapwing and Black-tailed Godwit. When the floodwaters recede, in summer, they reveal lush, botanically-rich meadows which are either cut for hay or grazed by cattle. The Corncrake, now globally endangered, has been recorded here, and other rare birds may also breed here, such as Shoveler and Quail. Waders such as Curlew, Redshank, Snipe and Lapwing are regular breeders. Hen Harrier and Merlin may be seen occasionally, hunting during the breeding season. The Callows extend through Westmeath, Offaly, Galway and Roscommon and have been designated as a Special Area of Conservation. The continuation of this habitat is dependent on seasonal flooding, low intensity agriculture and the cutting of hay over silage production<sup>∞</sup>. Further information on the Shannon Callows is given in relation to its status as a designated site, in Appendix Four.

Other grassland and marsh habitats exist throughout the county, in river floodplains, close to the lakeshores and along the banks of the Grand Canal, with varied biodiversity values

## Peatlands

Ireland is the most important country in Europe for peatlands and county Westmeath has 15 peatlands designated for conservation. A Peatland Study has been carried out for Westmeath County Council, which describes the condition, value and characteristics of peatlands in the County. As already discussed in the Material Assets section, two types of peatland are found in Westmeath: raised bogs and fens.

### Raised Bogs

Raised Bogs are dome-shaped bogs which have developed in former lake basins. They are considered valuable and diverse wetland habitats as their rich diversity of flora and fauna are becoming increasingly rare in Ireland. Since their nutrient supply is obtained from rainfall, they are acidic and so only a very specialised and quite unique flora can survive there, dominated by sphagnum mosses and heathers.

If you walk across a relatively intact raised bog, you will usually pass through 'cutover' areas where peat is cut and where, in the summer, peat sods are left in piles to dry. You may have to cross some deep drains and climb up a steep bank before you meet the bog 'proper'. The outer part of the bog is often quite dry, and dominated by heathers. As you walk over the dome towards the centre, it becomes wetter, with pools, some of which can be quite deep and hazardous, interspersed with drier mounds, called hummocks. These are the areas in which the characteristic raised bog flora can be found.

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<sup>∞</sup> The Heritage Council, *Waterways Corridor Study: Lanesborough to Shannonbridge, 2004*





Cutover bog has its own value as a wildlife habitat, mainly because it is undisturbed and free from intensive management. After peat has been cut, the 'cutover' is gradually re-colonised by plants, shrubs and trees. Some cutover areas have a rich variety of wildlife.

Cutaway bog, on the other hand, is much less valuable for wildlife, since it has been cut by huge machines, creating a flat, 'brown desert', where nature is slow to recolonise.

The bogs of Co. Westmeath are used as refuges for the now rare Greenland White-fronted goose, which winters on the lakes. Other birds which can be seen on raised bogs include Red Grouse, Curlew, Snipe, Meadow Pipit, Skylark, Kestrel and Hooded Crow<sup>∞</sup>.

Garriskil Bog lies 3 km west of Lough Derravaragh and 3 km east of Rathowen. The site has a well developed system of pools and hummocks, characteristic of raised bogs. The most important flora here are Sphagnum mosses. On the drier hummocks, one can see Bilberry, while the pools contain plants such as white-beaked sedge and the great sundew. Bog asphodel can be seen growing among Sphagnum moss carpets, while common cottongrass grows away from the wetter areas. There is a rich lichen flora on the drier hummocks. The main threat to the site is the arterial drainage of the nearby River Inny, which could lower the water table and cause the bog to dry out.

Wooddown Bog lies about 4km east of Mullingar a few kms south of the Royal Canal. This bog also has an area of cutover, some of which is still being worked. Wooddown is much drier than Garriskil, with very few bog pools. Since the bog is drier, some birch woodland has colonised. On the northern edge of the high bog, one can see a flush and soak system. This is where mineral-rich water is present, helping to create a very different assemblage of flora, including Downy Birch, the aromatic-scented Bog Myrtle and Meadowsweet.

Due to their considerable value as sources of turf for fuel and horticultural products, the area of raised bogs being maintained as wetlands is reducing and intact raised bogs are now very rare all over Europe. 92% of raised bogs in Ireland have been cut away for peat or drained for agriculture and forestry over the centuries and as a result the remaining sites in Westmeath have an added significance.

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

In 2004, Coillte began the process of restoring 571 hectares of raised bog habitat on its property in seven midland counties. 178 hectares of the project are in County Westmeath; comprising Carn Park Bog, 4 km north-east of Athlone, Crosswood Bog, 3 Km east of Athlone and a portion of Mount Hevey Bog, 5 km north east of Kinnegad. The project, which is due to be completed in 2008, is the largest single raised bog restoration project ever undertaken in Ireland and is supported through EU LIFE Funds as administered through the National Parks and Wildlife Service. The project will contribute towards maintaining our valuable wetland raised bog heritage.

Actions of the bog restoration project include:

- Felling and clearing of 450 ha of plantation forest, including naturally regenerated exotic trees on open bog in the project area;
- Block drains in order to elevate water levels and restore the hydrological balance of the peatland areas;
- Securing turbary rights to prevent further peat cutting;
- Perimeter protection of vulnerable raised bog against fire and
- Ongoing monitoring of vegetation and water levels.

Expected results of the project are that the area of open bog will be increased by 450 ha through the removal of conifers; there will be a significant improvement in the quality of the open bog areas due mainly to measures taken to re-establish natural water levels and there will be a measurable increase in actively growing raised bog species and over time active peat formation will be restored.

Peat extraction and associated drainage has been the biggest cause of loss of peatland habitat. Industrial peat harvesting is the biggest factor. Other threats include afforestation and illegal dumping.

## **Fens**

**Fens** are flat bogs, which are found around lake margins and in waterlogged areas where there is a supply of mineral-rich water and have a permanently high water level at or just below the surface. Its principal source of nutrients is from surface or ground water and the substrate is an alkaline to slightly acid peat soil. The vegetation of fens is diverse and usually dominated by sedges and brown mosses.

Fens are divided into two major groups based upon their topography and hydrology. These are topogenous fens and soilgenous fens:

Topogenous Fens are formed where the topography results in a basin-type water collection system with little water movement out of the system. There are three types as follows. Open water transition fens are those that occur on lake edges. These fens occur predominantly in limestone regions and can be quite extensive. Flood plain fens occur on a waterlogged floodplain of a river or stream such as those alongside the River Shannon and its tributaries. This fen type is now rare in Ireland, as many sites have disappeared as a result of arterial drainage. Basin fens form in waterlogged basins such as Scragh Bog as described below. This fen type is rare in Ireland and occurs mainly in the midlands. With time many basin fens have developed into raised bogs as the peat continued to accumulate. The basin fens that remain are important refuges for rare species of flora and fauna.

Soilgenous Fens are formed where sloping terrain provides a continuous supply of flowing water. There are three types of soilgenous fens as follows. Valley Fens develop on the floor of shallow valleys. The slope within these fens may be very gentle and water movement may not be immediately apparent. Valley fens are rare and occur mainly in the eastern part of the country. Flush Fens are small areas within other peatland types, mainly blanket bog. Within these areas the localised flow of water supplies more minerals than are found in the surrounding peatland and a fen develops. This fen type is widespread within blanket bog areas of the west of Ireland. Unusual communities of plants are found in these fens, more typical of arctic conditions. Calcareous Spring Fens develop around freshwater springs that are



especially rich in calcium. The water feeding these fens wells up from the ground and often deposits a white crust known as tufa on the ground vegetation. They are usually very small sites and often occur within larger wetland system. These fens are uncommon in Ireland.

Scragh Bog lies 10 km northwest of Mullingar, Co. Westmeath. Although it is called a bog, it is actually a fen, with very different vegetation to a raised bog. Apart from the mosses, the fen is dominated by Black Bog-rush, with long-stalked yellow-sedge, narrow-leaved marsh-orchid, Marsh Arrowgrass and grass-of-parnassus. The 'quaking fen' supports slender sedge, bogbean, water horsetail. Slender cottongrass, a protected species which is also rare in Europe, occurs here. Wet woodland, called 'fen carr' is dominated by willows, including the rare grey willow and by Downy Birch. Round-leaved Wintergreen, another Red Data Book species, is found amongst the fen carr. One of Ireland's rarest and most beautiful butterflies, the Marsh Fritillary, can be found here.

Fens have a high nature conservation value. There is a great diversity of plants and animals that inhabit fens and a number of these species are rare in Ireland and Western Europe. Some of these species can be described as 'relict' species. They were once widespread in Ireland but only survive in a few locations today such as marsh saxifrage and the whorl snail, *Vertigo geyeri*. Ancient fens of the midlands and lakeshores particularly around Mullingar count as some of the best European areas for many species of relict beetle.

Fen habitats are rare in Ireland today and are under increasing threat as a result of drainage, land reclamation and development. Fens are a relict habitat themselves as they were once widespread across Ireland but now have only a limited distribution.

Fens act in a number of different ways to regulate our environment. These functions include water purification, flood prevention, and carbon storage, which are becoming increasingly important since the realisation of global warming.

## **Woodland and Scrub**

### **Esker woodland habitat**

Eskers as discussed in detail in Section 4.2.5, are valuable not only as glacial geomorphological features but also for their distinctive native woodland and grassland. Since eskers are usually quite steep, they often survived agricultural improvement and the grassy slopes were used only for low intensity grazing. Since they were mostly free from herbicides and heavy fertiliser use, esker grasslands have a rich variety of interesting and colourful flora.

The ecosystem itself consists of all elements living in the esker habitat; the esker itself forms the basis for the ecosystem while water, air, plants and animals are the dynamic movements moving around within it. Especially noteworthy in this ecosystem are the flora and fauna. Furthermore, their thin, alkaline soils promotes rare plants. These woodland areas, promote an ecosystem that is considered unique nationally and internationally.



### **Native woodland**

Native woodland is scarce in Westmeath, as in Ireland in general. Patches of native woodland survive on some eskers, mentioned above, and around some of the lakes and rivers. Generally, these are quite small but are nonetheless extremely valuable, since there is so little of this habitat left. Native woodland, scrub and even some plantations are home to a variety of bird species, including some that are more easily heard than seen (e.g. Jay and Long-eared Owl)<sup>∞</sup>.

The following areas have native woodland of conservation interest:

- Shores of Lough Derravaragh

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

Patches of deciduous woodland with native species such as rowan, hazel, oak and ash occur on the hills around the south-east corner of the lake. Some new broadleaf woods have been planted on the southern slopes of hilly land overlooking the lake.

- Shores of Lough Bane

Mixed woodland occurs along parts of the south and north shores. Species present include beech, oak, holly, Scots pine and European larch. In some areas, hazel is dominant, along with other shrubby species such as hawthorn.

- Shores of Lough Ennell

Mixed woodland of beech, ash, and downy birch fringes the lakeshore to the northwest. Bluebell and Lords-and-ladies are among the woodland ground flora.

- Shores of Lough Ree

Pockets of woodland are present around the lakeshore, including bog woodland with birch and alder buckthorn. Bird cherry and alder buckthorn are now scarce in Ireland, and the Lough Ree shore is one of the few sites where they can be seen. The woodlands and scrub around the lake and on the islands are a stronghold of the Garden Warbler a bird which is confined mainly to the Shannon Lakes.

- Along the Boyne and Blackwater

Wet woodland fringes many stretches of the Boyne and Blackwater where they flow through Westmeath, with ground flora typical of wet woodland, including Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

### **Planted deciduous woodland**

Mature deciduous woodland can be seen along much of the Boyne and its tributaries on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these were originally planted in origin.

Elsewhere, small patches of deciduous woodland are scattered through the county on farms and old estates. These were usually of planted origin, and together with hedgerows and hedgerow trees, they dress an otherwise bare landscape. Their wildlife value is perhaps less important but nonetheless planted woodland provides shelter, cover and nesting spaces for species that would not otherwise occur. Some examples of old estate parkland and woodland are at Tullynally, near Castlepollard, and Belvedere House. Some of the best examples of different trees in Westmeath can be seen at both locations<sup>∞</sup>.

### **Conifer and mixed plantations**

Westmeath is not heavily forested. Some plantations of conifers and broadleaves occur south of Castlepollard and south of Lough Lene. Although these plantations are not as valuable for nature as native woodland, they should not be dismissed. Occasionally, forest clearings may reveal some interesting species such as the Nightjar, a secretive nocturnal bird which visits in summer. Other birds which can be seen in plantations include the Goldcrest, Chiff-chaff, various tit species, Sparrow Hawk and Long-eared Owl.

### **Hedgerows**

Each year, as the hedgerows come into blossom, we are reminded that spring has come and summer is near. Hedgerows are nature's corridors. Planted only a few hundred years ago, they give shelter and cover to a wide range of birds, some mammals and many invertebrates. Hedgerows have become naturalised into the countryside, and the patchwork tapestry they have formed is now very much part of the landscape of Westmeath.

Westmeath County Council completed a hedgerow survey in 2004, the first of its kind in Ireland. The survey revealed that the county has just over 10,000 kms of hedgerows. Five

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

main types can be found: willow hedges, hawthorn hedges with few other species, hedges of hawthorn and blackthorn, hedges with many species, and gorse hedges. The most valuable hedgerows for heritage are those marking townland boundaries and roadside hedgerows. Townland boundaries are marked on the old 6 inch and 25 inch scale Ordnance Survey maps.

Hedgerows need some sympathetic management if they are to make good wildlife habitats — and stockproof barriers. Ideally, they should be kept quite tall and dense, with trees growing through them at intervals. Lack of management leads to tall, gappy hedgerows which may be neither good for farming nor wildlife. About one-half of the county's hedgerows are unmanaged, which could mean that they might be abandoned and eventually disappear. On the other hand, one-fifth of hedgerows are less than 1.5 metres in height, having been managed too severely. Neither of these practices help wildlife. Westmeath Co. Council is encouraging all those involved with hedgerows to take action to improve the county's hedgerow stock for the future.

## **Exposed rock and disturbed ground**

### **Abandoned quarries**

These are unlikely wildlife habitats, but nevertheless, some unusual and even rare species can be found in them. The Peregrine Falcon chooses old quarries as nesting sites, and this magnificent, once-scarce bird has colonised a number of such sites in Westmeath. Some rare plants of disturbed ground (ruderal species) find a foothold in quarries, especially old sand and gravel workings. Holes fill with water and become ponds, holding amphibians including frogs and newts, and dragonflies and damselflies. Some ponds have even been colonised by, or stocked with, coarse fish.

### **Cultivated land**

Wildlife can be found not only in lakes, woods and hedgerows, but also in the less glamorous environment of gardens. Gardens with plenty of cover and with little or no pesticides will attract birds and a variety of invertebrates, such as butterflies and moths. Berry-bearing shrubs and trees are valuable as food for hungry winter residents, such as Song Thrush and Mistle Thrush, and visitors such as Redwing and Waxwing, which will flock to Ireland during cold snaps in Scandinavia<sup>∞</sup>.

County Westmeath has many fine country houses, historic demesnes and estate lands. Demesne landscapes in particular are concentrated around the north east of the County. They contribute features of interest for their characteristic landscape and ornamental trees as well as their architectural design and associated elements that make up demesne landscapes including deerparks, gate lodges, follies and walled gardens. The future of historic demesnes depends on new uses being found for them that are sympathetic to their character and setting. There is much interest in developing them as hotels with associated golf courses and housing development.

## **Protected Features and Areas of Natural Heritage**

### **Natural Heritage Areas (NHAs)**

The basic designation for wildlife is the Natural Heritage Area. In 1995, proposals for over 1,100 NHAs were published, but it was not until December 2000 that powers were introduced for the statutory process of their designation and protection. Many of these NHAs have overlapping designations of SAC (see below) and/or SPA (see below), but there are currently 802 proposed NHAs which are not SAC/SPA. They cover an area of about 113,000 hectares. These will be reviewed, and other sites surveyed, during the course of the designation process. Some of the proposed NHAs (pNHAs) are tiny, such as a roosting place for rare bats. Others are large - a blanket bog or a lake, for example.

The Geological Survey of Ireland (GSI) is compiling a list of geological sites in need of protection through NHA designation. A committee of expert geologists choose the sites.

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<sup>∞</sup> Hickie, *'Nature in Westmeath: A Wildlife and Habitat Guide'*, 2005

These will be designated over a period of time, with the most "at risk" sites receiving protection first. The GSI has completed its list of karst (i.e. exposed limestone) and early fossil sites.

The process of formal designation of NHAs has now commenced. In December 2002, the process of protecting the first batch of Natural Heritage Areas began. To date 75 raised bogs and 73 Blanket Bogs have been designated.

### **Proposed Natural Heritage Areas**

Parts of County Westmeath of interest in terms of their natural heritage value and these areas have been proposed for designation as Natural Heritage Areas, other areas of natural heritage interest do not yet have such designations. Prior to statutory designation, proposed NHAs are subject to limited protection, under the Rural Environment Protection Scheme (REPS) plans which require conservation of NHAs and operate for a period of 5 years. Under the Wildlife (Amendment) Act, 2000 NHAs are legally protected from damage from the date they are formally proposed.

The list of these proposed Natural Heritage Areas is set out in Appendix Four. Policy in the Draft County Development Plan afford these areas a degree of protection from development that may injure their heritage value and it is committed that proposals for environmentally sensitive developments in these areas will be referred to Duchas for their comments.

### **Special Areas of Conservation (SACs)**

SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. Most SACs are in the countryside, although a few sites reach into town or city landscapes.

The legal basis on which SACs are selected and designated is the EU Habitats Directive(92/43/EEC), transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997. These Regulations have since been amended twice with SI 233/1998 & SI 378/2005. The Directive lists (Annex I) certain habitats that must be protected within SACs. Irish habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. There is also a list (Annex II) of species, which must be afforded protection and for Ireland this includes the Bottle-Nosed Dolphin, Otter, Freshwater Pearl Mussel and Killarney Fern.

The Directive seeks to establish "Natura 2000", a network of protected areas throughout the European Community. It is the responsibility of each member state to designate Special Areas of Conservation (SACs) to protect habitats and species, which, together with the Special Protection Areas (SPAs) designated under the EU Birds Directive(79/409/EEC), form Natura 2000.

To date, Ireland has transmitted 413 sites to the European Commission as candidate Special Areas of Conservation. These cover an area of approximately 10,600 sq. km - a little over 30% of which is marine. Across the EU, almost 20,600 sites have been identified and proposed, covering an area of over 545,000 sq. km - a little under 15% of which is marine.

Special Areas of Conservation (SACs) that have been designated in County Westmeath are listed and detailed in Appendix Four and shown on the attached map.

### **Special Protection Areas (SPAs)**

The EU Birds Directive(79/409/EEC) came into force in 1979 and it requires each member state to designate "Special Protection Areas" for birds. The Directive contains annexes which are lists of birds which require particular conservation measures (Annex I), and also species which may be not hunted, and species which may not be sold. Annex I species include Whooper Swan, Greenland White-fronted Goose, Peregrine Falcon, Corncrake and Terns. Member states are also required to protect sites, which are important for migratory species such as ducks, geese and waders.

Some of the listed species conveniently occur in high numbers and densities. However others, such as breeding waders and birds of prey, occur at very low density where designation of sites is a more difficult, although necessary, exercise.

To date, 120 SPAs have been designated in Ireland. A further 7 sites have been notified to landowners. Approximately 25 SPAs are also designated SAC. The Irish SPAs join a total of over 4,200 sites covering over 380,000 sq. km across the EU. Species for which SPAs have been designated are listed on Annex 1 of the Directive

Special Protection Areas (SPAs) that have been designated in County Westmeath are listed and detailed in Appendix Four and shown on the attached map.

### **Nature Reserves**

A Nature Reserve is an area of importance to wildlife, which is protected under Ministerial order. Most are owned by the State. However, some are owned by organisations or private landowners, and persons interested in acquiring statutory protection for their lands can seek advice on this matter from the Department.

One Nature Reserve is designated in Co. Westmeath. This is at Scragh Bog, an area of 22.8 ha. This bog is situated about three miles north of Mullingar. It is the best example in Ireland of the transition from alkaline fen to acidic raised bog and one of the few remaining in Europe. It contains a large number of uncommon plants and insects which are rare in Europe. The bog is rated as being of international importance. The greater part of the bog was purchased by the Irish Peatland Conservation Council with funds generously provided by the Dutch Foundation for the Conservation of Irish Bogs. It was then handed over to the State for management as a Nature Reserve.

### **Ramsar Sites**

The following Ramsar Sites, ie areas of marsh, peatland etc that are protected under the Ramsar Convention of 1971, have been designated in County Westmeath:

Lough Derravaragh. 11/06/96; Westmeath; 1,120 ha; 53°40'N 007°20'W. A raised or cutaway bog with a shallow, alkaline lake and extensive reedbeds and swamps. Vegetation includes various aquatic plants dominated by reeds and sedges, several of which have a restricted distribution in Ireland, and deciduous woodland composed of native species. The site supports nationally important numbers of several species of waterbirds and provides valuable habitat for otter. Human activities include fishing, hunting, canoeing and water sports. Ramsar site no. 847.

Lough Ennell. 11/06/96; Westmeath; 1,404 ha; 53°27'N 007°23'W. A large, steep-sided lake fringed by calcareous grassland, wet marshy areas, reedbeds and mixed woodland. The site is of significance as a highly productive lake rich in its range of lower plants and invertebrate species. Its lakeshore habitats provide important refuges for waterbirds, as well as supporting rare or endemic flora. Ramsar site no. 848.

Lough Glen. 11/06/96; Westmeath; 81 ha; 53°25'N 007°23'W. A lake dominated by freshwater marsh and including reedswamp, wet and dry grassland vegetation, cutaway bog colonized by heath vegetation, scrub, wet willow woodland, exposed rock and fen. The site supports large numbers of Dabbling ducks and internationally significant numbers of Whooper swan. Ramsar site no. 849.

Lough Iron. 11/06/96; Westmeath; 182 ha; 53°37'N 007°17'W. The site, a long narrow lake with fringing marsh and woodlands surrounded by intensively farmed agricultural land, is one of the most important waterbird sites in the midlands. In addition to supporting large numbers of snipe and duck, there are internationally important numbers of Greenland White-fronted geese and Whooper swans wintering at the site that feed on the surrounding farmland. The marsh areas support numerous rare plant species. Ramsar site no. 850.

Lough Owel. 11/06/96; Westmeath; 1,032 ha; 53°35'N 007°23'W. One of the best examples of a large, spring-fed calcareous lake in Ireland. The lake and fringing wetlands support an outstanding array of rare plant species as well as bird and fish populations of considerable

interest. Adjacent farmland are feeding grounds for internationally important numbers of the Greenland White-fronted goose. Human activities include: water abstraction, intense fishing pressure and boating. Ramsar site no. 851

### **Protected Trees**

Trees provide great amenity value in the landscape and are also an important wildlife habitat. Many of the county's finest trees are found in old estate parkland and woodland such as Belvedere and Tullynally. Trees in urban settings add colour texture and structure to townscapes. Trees and their setting are under pressure from building and road development. Section 205 of the Planning and Development Act 2000 provides for the designation of Tree Preservation Orders and a number of trees are listed in the County Development Plan 2002 for such protection. This list is given in Appendix Five.

The Tree Register of Ireland, was set up in 1999 to compile a comprehensive database of remarkable trees in Ireland. The database now contains details of over 5,000 trees, many of which are national or county champions. Trees can be remarkable for many reasons: their height, diameter, age and for their historical and folklore associations. The list of trees noted as remarkable in Westmeath are listed in Appendix Five.<sup>∞</sup>

### **Hedgerows**

A survey was carried out on Westmeath's hedges in 2004 and found that hedgerows are under threat both qualitatively and quantitatively. Increasing urban and rural development and changing farming practices all impact on hedgerows and detract from their associated wildlife and landscape values. Townland boundary hedges and species rich hedges are particularly at risk. The National Biodiversity Plan states, "for the future, the overall goal should be no net loss of the hedgerow resource". The corridor role of hedgerows in facilitating the movement and distribution of wild flora and fauna through the landscape is significant.

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<sup>∞</sup> <http://www.treecouncil.ie/treeregister.html>





### **Other features of Natural Heritage**

Mushroom Stones are “water worn limestone blocks, eroded up to a certain height by the solvent action of former lake water”. An example of a mushroom stone is located in County Westmeath at Tullin and this shows “the level at which Lough Ree once stood, 10 to 15 feet higher than it’s present summer level”. This example, along with others in the region, show that the lakewaters once spread over a large area; probably over the whole of that now occupied by bog. Mushroom Stones are an important feature of landscape heritage as important features of archaeological, historical and ecological interest. They are important geomorphological features because of the information they contain about past landscapes and landscape change. However despite this they enjoy no formal protection of their own.

### **Do-Nothing Scenario**

Many of the above habitats and features have been afforded a level of protection due to European designations or Development Plan policy. However, without strengthened policy in relation to quarrying, removal of hedgerows, wind energy and flood risk for example, a number of habitats may come under threat in the future from development.



#### 4.2.7 Cultural Heritage, including architectural and archaeological



#### Architecture

##### Protected Structures

A number of buildings and other structures are considered to be of interest for reasons of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and are listed in the County Development Plan 2008-2013. Section 10(2)f of the Planning and Development Act, 2000 as amended makes the protection of architectural heritage mandatory.

##### **National Inventory of Architectural Heritage (NIAH) - ministerial recommendations**

Results from the most recent NIAH survey carried out at a national level have recently become available for Westmeath. The proposed reviewed Record of Protected Structures will take account of the ministerial recommendations arising from the NIAH surveys.

##### **Architectural Conservation Areas (ACA)**

Section 81 of the Planning & Development Act 2000 places a statutory obligation on Planning Authorities to ensure that all development plans must now include objectives to preserve the character of a place, area, group of structures or townscape that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures.

A number of Architectural Conservation Areas (ACA) have been designated in towns and villages in the County since the adoption of the 2002 County Development Plan. These designations have been reviewed as part of the Review and some new designations have been made in the Plan.

## Archaeology

Westmeath has a rich and diverse archaeological heritage; settlement here dates back over five thousand years, with almost 3000 known archaeological sites. The archaeological heritage is recognised within the CDP 2002-2008, but since its publication in 2002 there has been significant legislative change, which directly impacts on archaeology, namely the National Monuments Act 2004. In addition other new legislation that will indirectly impact on the archaeology of Westmeath would be the Critical Infrastructure Bill. Since the publication of the County Development Plan in 2002 there have been a series of Codes of Practice agreed between the Department of Environment, Heritage and Local Government and various industrial sectors including Bórd Gáis, the National Roads Authority, and the Quarrying Industry which provide a partnership model for dealing with archaeological works. One of the major benefits of the increased development has been the corresponding increase in the number of archaeological assessments, investigations and excavations, as a consequence of which there is now a considerable body of data. Archaeological excavations are usually only carried out where the option of preserving a site in situ is not available and it is necessary to destroy the site.

The recognised archaeological heritage of County Westmeath includes structures, constructions, groups of buildings, developed sites, all recorded monuments as well as their contexts and moveable objects both on land and underwater, according to the European Convention for the Protection of Archaeological Heritage, 1992. This means that the archaeological heritage is not confined to that which is included in the Record of Monuments and Sites, but also includes any archaeological site that may not have been recorded yet (i.e. not yet discovered) as well as archaeology beneath the ground surface and the context of any site.

The County Development Plan 2002-2008 sets out some specific development control standards in relation to archaeology. Policy includes a commitment to refer applications for proposed developments within Zones of Archaeological Potential and in sites on or abutting recorded Sites or Monuments to Duchas, the Heritage Service. Policy also includes a commitment that where a proposed development would result in significant ground disturbance within such areas, a comprehensive archaeological report will be required for assessment by Duchas and the planning authority. Furthermore, in all such cases, planning permission will also require that a licensed archaeologist be retained on site to monitor all site works, requiring the preservation of archaeological material where appropriate. There is also a requirement that development must cease immediately on the finding of any artefacts of archaeological interest and the planning authority and Duchas be notified.

General policies relating to the archaeology in the Development Plan and incorporated in the AhloneTown Plan 2002-2008 provide for:

- The protection of archaeological remains and their settings
- Archaeological Assessment and Evaluation to be required as appropriate prior to allowing development to take place
- Conditions to be attached to planning permissions ensuring that identification and mitigation of archaeological impacts of development
- Schedule 5 of the County Development Plan 2002-2008 lists 7 Zones of Archaeological Potential within which "development will only be permitted where the Council considers the importance of the proposed development or other material considerations outweigh the value of the remains in question".
- 15 National Monuments in State Care are listed in the Schedule 5 of the 2002-2008 Plan and these are protected under the National Monuments Acts (1930-2004) as amended.
- There are currently 17 Preservation Orders and 1 Temporary Preservation Order in Westmeath.

The County Heritage Plan contains a number of objectives for the protecting of the County's archaeological heritage. The Hill of Uisneach is identified as one of the most famous archaeological sites in the County and is of national importance. An objective is contained in both the Heritage plan and the CDP 2002-2008 to work on improving access to this site with the involvement of the landowners and relevant authorities.

In conclusion, the archaeological heritage in County Westmeath is considered generally well preserved. Some activities, such as road building projects for example can actually lead to the discovery of archaeological objects and procedures are in place through legislation to deal with these issues. The numbers of 'fulachta fiadh' or prehistoric cooking sites for example that are protected in the Record of Monument Places, has increased to almost 100 as a result of discoveries following infrastructural work. Developments giving rise to archaeological excavations are not limited solely to the major infrastructural works throughout the County. Excavations within our towns, whether as part of the broadband roll out or major commercial developments have unearthed enormous information about where and how people lived, about how people worked and about how people died. In addition to the 3,000 upstanding archaeological sites within the County, there are countless unrecorded sites. Many of these sites only become apparent in the course of development, be it of a road, a drainage scheme, a quarry, a commercial development or even a single house. Some sites are known about within the community because they are handed down in folk memory. The sites that resonate most strongly, and are therefore most likely to be remembered, are Children's Burial Grounds and these unrecorded graveyards of the 18th and 19th century are often situated at older archaeological sites. Recent excavations undertaken due to road projects have resulted in a number of findings of significance.

Underwater archaeology is a heritage aspect that has been in general poorly researched in the Westmeath area. Potential for underwater archaeology exists in Lough Ree near Athlone and in Lough Owel in particular. This issue should be further explored.

### **Fore Special Heritage Area**

The designation of Fore Village and its hinterland as a Special Heritage Area results from the realisation of its exceptional historical and archaeological importance and the enormous contribution that it can make towards the development of tourism within the County.

To this end the detailed policies in relation to siting and design of new development that operate in other High Amenity Areas are extended to the Fore Area (outside the villages of Collinstown and Fore). In particular, such development should not cause direct or indirect damage or interference to various environmental designated areas, archaeological monuments or buildings of artistic, historic or architectural value. The use of sympathetic materials and finishes is encouraged with regard to both new development and renovation of existing buildings in both villages.

The richness of the archaeological and historical remains of Fore Village, together with the attractive landscape in which they are set, mark this area out as one of national importance.



#### **Do-Nothing Scenario**

While our cultural heritage has been protected to a certain degree, there are features that may be of importance without the appropriate level of protection that may be come under threat. Detailed studies and reviews are necessary to ensure that our cultural heritage is afforded sufficient and appropriate protection, which are generally carried as part of the Development Plan review process.

### **4.3 SIGNIFICANT ENVIRONMENTAL ISSUES**

#### **4.3.1 Types and Patterns of Development that may raise environmental issues**

##### **Developments subject to the Seveso II Directive**

This type of development has been discussed in Section 4.2.2 and may impact upon risk to Health and Safety.

##### **Heavy Industrial Development**

'Bad Neighbour' development types such as construction and demolition waste recovery facilities etc, if unsuitably sited, may be injurious to the amenity of nearby residents. This is due to the nature of such development; it may result in noise disturbance, air pollution or excessive volumes of heavy vehicle traffic for example.

##### **Intensive Agricultural, Horticultural and Forestry Development**

Development such as piggeries, mushrooms and forestry may result in diffuse pollution to surface and groundwater. Such activities are described in further detail in the following sections.

## **IPPC and Waste licensed facilities and Other Potentially polluting development**

Local Authorities are consulted in relation to IPPC licenses as the majority discharge to municipal sewers and also to water bodies and air. Monitoring and enforcement is carried out in relation to the licences. Nationally, non-compliance notices are issued to approximately 35% of licensed facilities. Such developments therefore are potential polluters

Section 4 licenses are generally for trade effluents discharging to water bodies and are issued by local authorities. Section 16 licenses cover discharges of effluent to sewers. IPPC licenced activities in Westmeath are shown on attached 'General Environmental Vulnerabilities' map. Details of both IPPC licences and Waste Licences are given in Appendix Three.

Of these, four are classed as intensive agriculture; specifically piggeries. The are:

- Ballynagall, Knockdrin, north of Mullingar;
- Hodgestown Pig Unit, Killucan;
- Clondrisse Pig Farm, Killynan (Pratt), Cloghan, Delvin Road and
- Ballymanus Pig Unit, Castlepollard.

The piggeries in Knockdrin, Castlepollard and potentially the one in Kilucan are located within areas of extreme groundwater vulnerability. In this regard it is imperative that such industries be monitored and regulated carefully. No such industries should be located within areas of high or extreme groundwater vulnerability in the future.

## **Afforestation or deforestation**

It is recognised that Ireland needs more trees to comply with European standards. In the past, non-native conifers have been the logical choice for plantations from the 1950's onwards, since they thrived on the poor land that was available for forestry. In recent years and as better land has become available, there has been a slowly increasing emphasis on planting broadleaves. Westmeath now has one of the highest planting rates of broadleaves in the country. The species of trees planted has a bearing on the wildlife species that can exist in association with them. The way that plantations are managed however, has an even greater effect. Some conifer plantations have developed into interesting wildlife habitats, particularly where they are mixed with broadleaves, where areas have been left unplanted within the plantation and where some of the main crop has been allowed to grow undisturbed.

Large-scale harvesting has a huge impact on wildlife, so the emphasis now is on minimising this impact through the adherence to environmental guidelines on harvesting. It is also acknowledged that large scale felling would result in a significant negative impact on the landscape and this issue is now addressed through forestry management plans.

Forestry also causes a diffuse source of pollution to water resources due to acidification that results from the planting of trees, especially non native species.

Coillte, the State Forestry Board has been awarded environmental certification, which commits it to a range of measures to protect wildlife and habitats on land and in its care. Coillte has identified 15% of the 5120 ha it manages in Westmeath for the primary objective of biodiversity conservation.

All private afforestation projects now have to conform to a set of environmental guidelines in order to be given consent. Under these guidelines, hedgerows, wetlands, stream banks and existing woodland have to be retained and protected. Up to 15% of the plantation has to be set aside as open space and the retention of existing habitats.

## **Dwellings Served by Individual On-Site Wastewater Treatment Systems**

On-site systems are the primary method used for the treatment and disposal of domestic wastewater in rural areas. These systems are also used in urban areas, which are not connected to public sewer systems. On-site systems are often located close to private or public wells.

When choosing the location and type of on-site system, developers should have regard to any nearby groundwater source, the importance of the groundwater as a resource and the vulnerability of the underlying groundwater.

Surveys in other parts of the country have shown that in many cases private effluent treatment systems do not function satisfactorily; are not properly constructed and in general are not properly maintained. Monitoring of treatment systems and enforcement of planning conditions in relation to treatment systems is particularly difficult and onerous on the local authority. Increasing numbers of such systems is a significant environmental issue.

#### **Abstraction for Dublin water supply**

Proposals are being considered to abstract water from Lough Ree and the Shannon to help supply the increasing Dublin population. This will have a variety of impacts that may be significant downstream of the abstraction, particularly in terms of an alteration of the nature of the entire water body and catchment, potentially affecting the ecosystem and habitats such as the Shannon Callows. However it is difficult to ascertain the level of impact at this stage or the potential significance of these. The proposed project itself will be subject to a complete Environmental Assessment in its own right in due course.

#### **Wind farm development or other alternative forms of energy production**

The following impacts can occur during and following the development of windfarms:

- Visual impact, landscape change
- The impact of noise levels
- The impact of electro-magnetic interference
- Ecological Impact
- Archaeological impact
- Construction impact
- Health & Safety
- TV interference
- Visual impact of new power lines in the locality
- Geological impact
- Hydrological impact
- Aircraft & navigation impact

The scale of the wind energy development, environmental designations, habitats and ecology and the amenity of nearby residents must be taken into account in considering such development, in addition to practical considerations such as wind energy potential, proximity to the electricity grid and infrastructural supports.

#### **Brownfield Development**

Town and village centre redevelopment, if designed appropriately and carried out with regard to the existing cultural heritage in the area, including archaeological potential and architectural character can result in the more efficient use of zoned and serviced lands in central locations for a higher density of residential development that can reduce the number of trips made by the private car.

#### **Infrastructural development, including road / motorway building**

Road projects, train lines, pipelines, water abstraction, wastewater treatment systems and other large-scale infrastructural developments give rise to significant environmental issues such as impact to landscape and natural features. A large proportion of such projects are not



initiated or executed by the Planning Authority and are subject to plans made at a higher level.

### **Landfill and Waste Disposal**

Continued trends in waste generation and disposal to landfill would have detrimental implications for the environment. The Midlands Waste Management Plan sets a strategy for reducing waste disposal to landfill. If not properly monitored and managed, landfills will impact upon soil quality, air quality and water quality. Illegal waste disposal and fly-tipping will have similar impacts.

### **Quarries and Extractive Industries**

There is a wide range of potential environmental effects caused by quarries. Such impacts may arise during the development stage (e.g. earth stripping operations) or may endure throughout the life of the quarry, possibly over several decades. The impact can be permanent, even after closure and decommissioning, unless carefully planned rehabilitation is undertaken. Potential impacts include:

- Damage to esker systems - as already stated these are valuable resources in terms of their geodiversity and biodiversity value. Quarrying and extractive industries are a threat as it destroys the esker itself and often leaves a scar on the esker landscape.
- Extractive industries are associated with many noise-generating activities, such as the removal of topsoil and overburden, excavation with machinery, drilling and blasting of rock, crushing and screening of aggregates, transport of raw materials and finished products within the site and on public roads, etc.
- Blasting (which occurs at stone quarries) can give rise to vibration, audible noise, flyrock and dust. The levels of vibration caused by blasting are well below those which can cause structural damage to properties. Nonetheless, vibration transmitted through the ground and pressure waves through the air ("air overpressure") can shake buildings and people and may cause nuisance. Audible noise accompanies overpressure.
- There are numerous sources of dust generation within quarries, including the stripping of topsoil, the excavation of sand and gravel, the crushing and screening of aggregates, ancillary activities such as concrete mixing, and the transport of sand, gravel and finished products (point emissions). Wind can carry dust particles well beyond the site boundaries, and fine materials from lorries can be deposited along public roads (fugitive emissions).
- The quantity, and physical and chemical quality, of surface waters and groundwaters may be affected by quarrying activities; flows can be increased or decreased and may be contaminated by runoff or dust from the quarry. The removal of topsoil, overburden and aggregates may affect the quality of water recharging to an aquifer, and excavation below the water table may lead to de-watering and pollution of adjacent watercourses and wells.
- Quarry restoration may add to the diversity of plants and wildlife. There are many options for restoration that enable land to be returned to an attractive and useful form. On the other hand, natural habitats can be damaged or lost entirely as a result of quarrying and extraction, and features such as hedgerows, stone walls and trees can be removed. Gravel extraction and quarrying activities have the potential to impact on areas of valuable habitat, including orchid-rich grassland on eskers, where they are in the vicinity of such habitats. Habitats outside the quarry site can be impacted on indirectly by dust deposition, alteration to groundwater or surface water supplies, or as a result of run-off or siltation.
- Aggregate workings can remove parts of an existing landscape, such as a hill, or can introduce intrusive features, such as quarry faces or overburden mounds.

- Traffic within the site and on adjoining public roads can give rise to potential adverse effects. Heavy goods vehicles can cause noise, exhaust fumes, vibration and dust and break up of road structure. Additional traffic generated by the development may cause congestion, particularly on rural roads in the vicinity of the site, and is a frequent source of concern to local residents.
- Quarrying could have considerable archaeological implications, which must be addressed, given that aggregate resources can only be worked where they exist. Since the archaeological heritage is a non-renewable resource the presence of known archaeological sites or the anticipation of potential sites must be an essential consideration in the selection of development sites, or major expansion of an existing site. Similar considerations apply in the case of protected structures in rural areas.
- Waste Management issues can arise with such development and best practice is to eliminate or minimise the production of waste. Quarry operators should ensure, by securing their site entrance and boundaries, that illegal fly-tipping and disposal of waste by third parties does not occur.

### **Peat Extraction**

Peat extraction results in the removal of habitat and features of biodiversity value, particularly intensive peat extraction as discussed previously.

### **Golf course development**

This type of development results in changes to the landscape due to landscape manipulation and the removal of demesne landscapes in particular has been a recent trend. It also inevitably results in a loss of habitats and biodiversity value on the site and the use of fertilisers and herbicides can have adverse environmental effects.

### **Development in areas liable to flooding, Drainage Schemes**

In general, development in flood plains increases the risk of flooding. Such development also impacts upon essential components of the aquatic ecosystem. Flood alleviation and drainage works have the potential to destroy fisheries habitats and impact upon biodiversity.

### **Greenfield Residential Development**

Residential development can have far ranging environmental impacts, such as the use of land which is a non-renewable resource. Where significant residential development occurs in locations un-served by public transport and far from an employment centre, a number of factors can be impacted upon such as human health, air quality and ultimately, climate. This is due to greenhouse gas generation as a result of over-reliance on the private car extended commuting which also causes lower quality of life and community breakdown.

Habitat destruction through the removal of trees and hedgerows, drainage of wetlands, building on floodplains, culverting of watercourses, etc. are also associated with residential development on greenfield sites. Alterations to surface water drainage dynamics and the pollution potential of run off from urban areas can have significant environmental effects.

### **Recreation uses and tourism development**

The use of jet-skis on Westmeath's lakes have resulted in pressure in terms of water pollution, noise disturbance and deterioration of amenity for other lake users. They can be considered as safety and human health issues. Since the adoption of Bye-Laws; 'Prohibition of the Use of Personal Water Craft (Jet Skis) Bye Laws' by the Council in 2006, jet-skis are now banned on the following lakes: Lough Owel, Lough Ennell, Lough Lene, Lough Sheelin (part within Administrative Area of Westmeath County Council), Lough Sewdy and Lough Derravarragh. The ban doesn't apply to Lough Ree, which has raised concern that this may result in increased pressure on this lake. Jet skis and other personal watercraft such as power boats can have significant effects on aquatic flora and fauna, water quality and fish stocks as well as on human health as a result of noise disturbance.



Tourism related development, especially unsuitable or insensitive development, may impact upon water quality, landscape and the value of the tourism product itself.

#### **4.3.2 Environmentally Vulnerable areas or factors, likely to be significantly affected**

Areas/environmental factors likely to be significantly affected are those that are considered vulnerable or sensitive due to their heritage value, significance or vulnerability to pollution or damage. These areas have all been highlighted in the above section 4.2 following detailed descriptions of the characteristics of the existing 'state of the environment'. The determination of these areas was also informed through consultation carried out as described in Section 3.1, part 3.

These areas/factors are as follows:

- Sensitive Landscapes
- Air quality and climate, due to the increase in the use of the private car and increased traffic congestion, impacting on human health
- Human health in terms of longer commuting times affecting quality of life, as a result of inadequate land use and transportation planning
- Amenity of residents due to noise and air pollution from certain forms of development, impacting on human health
- Water quality as discussed above in section 4.2.3 (implementation of the Water Framework Directive, Nitrates Directive Groundwater Protection Scheme when available and bye-laws for agriculture and septic tanks if adopted will control and prevent impacts on water quality); groundwater quality in extremely or highly vulnerable areas, source protection areas, Lake and river water bodies classed by River Basin District Projects as 'at risk' from sources of pollution
- Habitats and species and other features of natural heritage or biodiversity value in areas without EU designations or other environmental designations
- Habitats such as the Shannon Callows that are sensitive to impacts upstream such as flood plain development or drainage schemes
- Features of geodiversity value, ie – esker ridges of value that hold reserves of gravel, including those containing existing quarries or extractive industries
- Intact peatlands are under pressure from peat harvesting industry, drainage wind energy development and other development
- Hedgerows will suffer damage or removal as a result of development of all types, particularly large scale greenfield development
- Areas of unidentified archaeological potential
- Architectural character and townscapes character that are unprotected may be affected by rapid urban growth.

The environmental characteristics of these areas has been described above in Section 4.2 under the related headings.

#### **4.3.3 Existing Environmental Issues Relevant to County Westmeath and the County Development Plan**

##### **Water Pollution**

As a result of scoping, consultation and desk-top research, it seems that the biggest environmental concern for Westmeath is surface and ground water pollution. The current status of surface and groundwater quality has been described above in section 4.2.3. Pressures on water quality are predominantly due to agricultural activity, development in areas where groundwater is vulnerable, too many or poorly sited and maintained septic tank systems and industrial development causing pollution.

Lough Owel is the main public water supply for the County and as such is considered vulnerable. Westmeath County Council are also obliged to supply water to the canal from this source. Lough Ennell has been vulnerable due to wastewater capacity issues. Lough Lene is in good condition and due to its importance as a water supply source and a bathing water it is considered important to maintain its quality. Lough Ree is significantly at risk of pollution as is Lough Sheelin and Lough Derraghvarragh.

River channels in the Boyne Catchment are salmonoid and as such their quality needs to be preserved. The River Brosna has been identified as one that is at risk of deterioration, along with parts of the river Inny, the Yellow River, Dungolman and the Shannon.

Water supply infrastructure and its capacity and condition is an issue; it is estimated that currently there is a 40% level of water leakage. This issue is being addressed through checking for leaks and the replacement of infrastructure.

Wastewater infrastructure and its capacity is also an issue that is impacting on water quality. This problem will be exacerbated if strategic settlement planning does not reflect capacity issues. Capacity problems exist due to storm water runoff into the town systems. There is a need to upgrade drainage systems in some areas and this issue is being addressed through projects described above in section 4.2.3. Small-scale settlement policies will result in pressures on the provision of wastewater services. Growth of Mullingar is required by national policy but the issue of wastewater treatment capacity to support this growth must be addressed on an ongoing basis.

Groundwater is an important resource, for drinking water and also due to the fact that it feeds a significant portion of surface water bodies so its quality affects that of surface water bodies. Areas where groundwater is extremely or highly vulnerable have been highlighted.

A number of measures are in place to prevent and control pollution of ground waters, such as agricultural bye-laws, and enforcement under the Water Pollution Act. Measures will be strengthened and increased with the adoption of River Basin District Management Plans under the Water Framework Directive in 2009.

The use of jet-skis have resulted in pressure in terms of water pollution, impact on fish life, noise disturbance etc. and although bye-laws have been adopted, they do not apply to Lough Ree, potentially placing increased pressure on this lake that is already at risk from pollution sources.

Fish habitats and species are an issue that have been raised through scoping and consultation. The main channel of the River Boyne and its tributaries including the Riverstown, Deel, Milltownpass, Stonyford, Kinnegad, etc. and Loughs Lene, Adeel, Bane and White can all be considered salmonoid and it is recommended by the Fisheries Board that they be afforded the maximum protection possible in this regard. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Loughs Owel, and Derraghvarragh also support stocks of coarse fish.

### **Protection of Habitats, Biodiversity, Flora and Fauna**

A range of sensitive habitats as discussed above and areas important for their biodiversity value will come under threat from development. This threat may come either directly through forms of development that may damage or remove them, such as the removal of hedgerows or tourism related development or indirectly through developments affecting flood plains further downstream for example. Zoning of greenfield land or amenity areas for development may result in a loss of biodiversity. Development on riverbanks or riparian zones will impact upon fish life and habitats as mentioned above. Development at specific locations will affect particular species, for example at Big Meadow, Athlone, the Corncrake and its habitat must be considered.

Zebra mussels, which are one of the biggest invasive pests in the world's freshwaters, which can affect the ecology of waters and damage infrastructure, have been recorded outside

connected waterways in Lough Derravaragh<sup>∞</sup>. They are also reported to be present in other lakes, one of which is Lough Sheelin.

Eskers are an important resource for their geodiversity and biodiversity value as discussed in detail above. While some esker ridges have been afforded protection in the form of European designations, others that are of importance have not and these come under pressure for development. The extractive industries in particular pose a threat and some such activities have already been permitted in esker ridges.

### **Landscape Impact**

Westmeath has a variety of landscapes, which are important and valued in terms of county identity, tourism and the amenity of all who visit and live in the county. Some landscape types in the County may be particularly sensitive to development, as can be seen from the landscape character assessment in the Development Plan.

### **Walking routes and amenity**

The relatively unspoilt natural environment in the County and facilities such as walking and cycling routes impact positively on human health as access to the countryside and recreation and amenity is opened up.

### **Waste Management**

Midlands Waste Management policy now prioritises reducing, reusing and recycling waste over disposal to landfill and incentives have been introduced to encourage this. However such policies may have had the effect of increasing illegal dumping and fly-tipping in the country.

### **Tourism-related Development**

Tourism related development and the promotion and facilitation of tourism may have significant impacts on a range of environmental factors, such as deterioration of water quality, flood risk, removal of habitats and damage to biodiversity, flora and fauna, damage to sensitive landscapes and sensitive environments. The effect on the population of the area should also be considered since such development is often attracted to rural locations and may impact on existing communities. Bord Fáilte considers Westmeath's lakes to be 'primary products' when in pristine condition and while tourism related development is in demand, a balance must be reached between maximising tourism potential and ensuring that such resources remain valuable (unspoilt, unpolluted etc).

### **Private car usage, increased commuting times and increased traffic congestion**

Air quality, climate and human health will be affected by increased dependence on the private car and traffic congestion. The continued lack of adequate public transport facilities will exacerbate this problem. An appropriate settlement strategy, traffic management plans and the provision of improved public transport services will help to decrease these impacts.

### **Flood Risk**

Flood risk issues are particularly relevant to Athlone from the AI River and Shannon, and other areas throughout the County as highlighted in the attached 'flood risk' map. Flood risk will be affected by zoning of lands in flood risk areas and floodplains, and flooding will impact on many environmental factors, including biodiversity, flora and fauna, human health, material assets and water quality. Zoning in particular must be assessed in terms of the potential to increase flood risk.

### **Other Issues**

The scale and extent of each type of development has a bearing on the significance of an environmental impact of any given development. Developments, which individually would not have a significant effect, can have a cumulative effect, as is the case with rural housing. The

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<sup>∞</sup> Waterways Ireland - <http://iwn.iwai.ie/v30i4/waterwaynews.PDF>

visual character of a rural area can be altered considerably and permanently through a proliferation of poorly designed and sited single rural housing and ground water can be permanently polluted by a proliferation of inadequate wastewater treatment systems.

Forestry is presently not a big issue for Westmeath and only exists in small pockets around the County. However, it may emerge as a bigger issue in years to come due to decline in agriculture, EU policy etc.

Zoning for industrial development in the County Development Plan 2002-2008 is for light industrial / technological and does not allow for more intensive industries such as car scrappage, mushroom composting. Any new objectives to accommodate more than just light industrial activities will raise environmental impacts in terms of noise pollution, water and air pollution, if not suitably sited or controlled.

#### **4.3.4 Conclusion – Significant Environmental Issues**

In summary, environmental pressures on the County relate to surface water quality and ground water quality and impacts of agriculture, industry, on-site wastewater treatment systems and public wastewater treatment, capacity of wastewater treatment provision for increasing development; landscape impacts from development; tourism related development and tourist activity; biodiversity and habitat protection; flood risk, increased use of the private car and maybe forestry in the future. The settlement strategy is a particularly important policy decision in terms of environmental effects; in particular in relation to generating car journeys; where the settlement strategy contributes to an increase in car trips e.g. by facilitating rural one-off housing and thereby generating trips to work, school, services etc., the settlement strategy can have adverse environmental effects.

#### **4.3.5 Consideration of Alternative Development Plan Policy Directions**

It is required in the legislation that the Environmental Report must consider “reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme” and the significant environmental effects of the alternatives selected. Section 3.14 of the DoEHLG SEA Guidelines indicate that certain strategic issues in County Development Plans may have already been determined at national or regional level. Furthermore, lower tier plans such as Local Area Plans, will be framed in a policy context set by levels above them (such as National Spatial Strategy, Regional Planning Guidelines and by the County Development Plan itself). The preparation of Development Plans must demonstrate consistency with national and regional policy and guidelines. As a result, alternative strategic options available for consideration in the preparation of the County Development Plan were quite limited.

Alternative strategies that were considered are outlined below. These were mainly based around the settlement strategy and strategic direction. The ‘Do-Nothing Scenario’, which is that which would occur in the event of non-implementation of the new plan 2008-2014 and the continuation with the last plan 2002-2008 is outlined in terms of environmental implications at the end of each of the above sections describing the environmental baseline.

##### **Alternative strategy option 1**

- Relaxed policies for rural housing, particularly in Clár areas resulting in pressure for one-off housing in rural area areas including those with extreme groundwater vulnerability and sensitive landscape. Ribbon development occurring, resulting in unsustainable transport patterns. Unsustainable rural development resulting in negative impacts to water quality, landscape and visual amenity. A deterioration of valuable ‘tourism products’, such as the lakes and landscapes would occur, resulting in declining value of the county as a tourist attraction
- Settlement strategy allowing only for higher levels of growth and service provision in principle towns in tier 1 (ie Mullingar, Athlone) and in tier 2. All other ‘priority settlements’ considered as having equal growth potential. The impact of this simplified settlement strategy would be that towns without adequate supporting infrastructure, eg Rochfortbridge, Ballymore etc would be allowed to grow as much as Kilbeggan for example or Delvin as much

as Castlepollard. Roles of settlements would not be complimentary and critical mass would not be attracted into any one centre to support district level services and facilities.

- Failure to consider impact of major infrastructural development such as the N6 and new development pressures in towns such as Rochfortbrige, Milltownpass, Kilbeggan.

### **Alternative strategy option 2**

- Avoidance of all development in or close to sensitive areas and landscapes, highly restrictive attitude to one off rural housing
- Channel all growth and development into existing urban areas without established settlement hierarchy and provision for employment centres to serve residential development appropriately. Unsustainable transport patterns encouraged as a result
- Lack of provision for rapid growth in the County – towns coming under immense pressure for rapid housing development without comprehensive masterplanning of new residential areas - housing needs being met through low density suburban type residential development
- No provision for rural development of any kind, resulting in rural population decline and breakdown of rural communities. Lack of strategy to address the decline in agriculture with rural diversification. Failure to realise potential of tourism.

### **Alternative strategy option 3**

- Restrictive attitude to rural housing in vulnerable areas but facilitation of housing subject to good siting and design principles, where local need exists, to encourage the strengthening of rural communities
- Provide for rapid increase in growth levels through additional zoning, resulting in an oversupply of zoned land for development. This would mean the expansion of town boundaries of Athlone, Mullingar, Moate, Kilbeggan and Castlepollard. A situation whereby priorities for development are unclear and piecemeal or disorderly development would arise and existing infrastructure would not be used in a sustainable manner. Insufficient wastewater treatment capacity would be provided for to deal with rapid pace of development in Mullingar and Moate, which would result in a continued deterioration of water quality in Lough Ennell and the River Brosna
- Lack of strategy for North Westmeath, resulting in disadvantage in terms of employment and services in this area as well as village decline and deterioration. Unsustainable transport patterns would be encouraged due to lack of employment and services in this part of the county, coupled with a lack of public transport facilities.

### **Preferred Option**

The three alternative strategies as outlined above were considered in light of the significant environmental issues for the County as concluded in previous sections of this Environmental Report. As a result of these considerations, a 'preferred strategy' was determined which incorporates a combination of features from the alternative strategies and also best practice and good planning principles. The main features of the 'preferred option' are as follows:

- Provide for existing level of growth plus any increase projected, through a review of zoning and projected future need provided for. The provision for physical and social infrastructure in accordance with projections and provision for phasing to ensure service provision in line with development.
- Settlement hierarchy that reflects the need for centres with different roles and development potential. Employment and major service centres on first tier, towns with capacity for growth and services, centres for some growth and limited services and employment, and centres with limited growth potential identified.

- Consolidate existing settlements by improving urban environments, encouraging brownfield and infill development and strengthening physical and social infrastructure.
- Support the role of the Midlands Linked Gateways as regionally important employment, retail and service centres through enhancing infrastructure in Athlone and Mullingar and linkages between them. Channelling new development into these towns focusing on key infrastructure nodes and maximising the use of serviced land at key locations.
- Protect valued rural environments while strengthening the rural economy through supporting its diversification and strengthening rural communities in a sustainable and strategy-led manner.
- Comprehensive strategy prepared for North Westmeath to be implemented to strengthen this region and provide for sustainable development within the overall settlement strategy.
- Realisation of the potential of tourism, through providing for tourism related development in a sustainable manner while protecting the tourism product.
- Encourage a mix of landuses where appropriate through landuse zoning and support for sustainable transport modes to reduce unsustainable forms of travel.
- Use of a Landscape Character Assessment to inform policies for development such as rural housing, wind energy and other development.

## **5 ENVIRONMENTAL PROTECTION OBJECTIVES RELEVANT TO PLAN**

### **5.1 INTRODUCTION**

The use of environmental protection objectives fulfils obligations set out in Section F, Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004. The environmental protection objectives are distinct from the County Development Plan objectives and provide a standard against which the goals, policies and objectives of the County Development Plan can be measured in order to highlight those with the potential for environmental impact. They are used as a tool to cross check the policies of the Plan in order to maximise the environmental sustainability of the Plan. The cross checking process will help identify policies that will be likely to result in significant adverse impacts, so that alternatives may be considered or mitigation measures may be put in place.

The environmental protection objectives for the Westmeath County Development Plan have been generated from European, National and Regional Policy and Guidance. Sample objectives are given in Table 4B of the SEA Guidelines produced by the DoEHLG in 2004 and these were amended to reflect the specific issues that are considered relevant to this particular Plan and the range of issues that are significant within the County. The scoping and public consultation processes informed the generation of appropriate objectives. The objectives are set out below, under a range of headings, which were taken from the SEA Regulations and the DoEHLG guidelines.

### **5.2 ENVIRONMENTAL PROTECTION OBJECTIVES**

#### **5.2.1 Biodiversity, Flora and Fauna**

- B1: Conserve and promote the diversity of habitats and species
- B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks

#### **5.2.2 Population and Human Health**

- P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution

#### **5.2.3 Water Resources**

- W1: Promote water conservation and sustainable water use based on long-term projections of available water resources.
- W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation.
- W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters.

#### **5.2.4 Soil and Material Assets**

- S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands.
- S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill.
- S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, water courses and all other physical and social infrastructure.
- S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods.

### **5.2.5 Cultural Heritage and Landscape**

- C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate.
- C2: Conserve and enhance valued natural and historic landscape features.
- C3: Enhance landscape and townscape quality and minimise negative visual impacts from development.
- C4: Protect and enhance the quality, character and features of waterways.
- C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features.

### **5.2.6 Air and Climatic Factors**

- A1: Reduce the need to travel by private car.
- A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change.
- A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms.
- A4: Reduce all forms of air pollution and promote tree planting where appropriate.

## **5.3 USE OF ENVIRONMENTAL PROTECTION OBJECTIVES**

The above Environmental Protection Objectives have been used to carry out the SEA in accordance with the legislation. They provide a standard against which the policies of the Development Plan were measured for their environmental sustainability. A crosschecking process has been used whereby the Plan policies were proofed against the Environmental Protection Objectives so that any policies with the potential for significant adverse environmental impacts were highlighted in addition to significant positive impacts. Alternative strategic options were considered or mitigation measures proposed to counteract any adverse environmental effects highlighted, thereby maximising the environmental sustainability of the Development Plan that has been produced.



## 6 STRATEGIC ENVIRONMENTAL ASSESSMENT OF POLICIES

### 6.1 METHODOLOGY FOR ASSESSMENT AND DETERMINATION OF SIGNIFICANCE OF EFFECTS

Matrices are the mechanism by which conflicts or potential conflicts between the policies of the County Development Plan and the strategic environmental objectives have been identified. These matrices are provided in Appendix One to this Environmental Report. The likely significant effects that the policies contained in the Plan will have on the environment were identified in this process.

The DoEHLG SEA Guidelines (Nov 2004) suggest that the assessment of likely significant effects on the environment should be carried out by the Development Plan team as a whole, preferably involving some external specialist advice. It was considered that external advice would be best provided through the expertise available from within the Council, Environmental Authorities and Prescribed Bodies. In order to determine the significance of impacts in the assessment of Development Plan strategic objectives and policies, a workshop format was considered optimum, involving the cross-departmental SEA Steering Group and planning staff.

The following stages were followed to ensure a robust and defensible determination of significance, particularly in difficult cases such as cumulative effect of single houses, or increased wastewater generation of particular settlements.

- Consultation with the public and relevant authorities and gathering of baseline data was carried out to determine the significant issues facing the County and the conclusions reached were presented to the Steering Group and the EPA and approved
- A set of Strategic Environmental Objectives were prepared within the Forward Planning Section, which are in accordance with National and international policy and guidance and also reflective of the significant issues facing Westmeath. These were then presented to the internal cross-departmental SEA Steering Group and the elected Members for agreement. (The environmental objectives are the standard against which the policy of the Plan will be measured)
- Each strategic objective and group of policies proposed for inclusion in the Plan were assessed against the agreed SEA objectives. This was carried out during the preparation of the Plan and changes were made as issues arose to make the Plan produced more environmentally sustainable.
- The Plan produced was formally assessed using the matrix (see Appendix One). The assessment of each was assigned a symbol;
  - o compatible (+),
  - o conflicting (-),
  - o no relationship or insignificant impact (/),
  - o possibly compatible or conflicting (?)
- Where the significance of the impact is uncertain or conflicting, the issue was raised for discussion and agreement with the Steering Group. All other issues were also raised for agreement with the Steering Group to ensure that significant issues were not missed or given undue consideration
- Evaluation of significance requires consideration of various questions, which will establish the importance, or "significance", of the predicted impact:
  1. Will the measure in the policy lead to a risk of environmental standards being breached?
  2. Could it lead to failure to achieve environmental policies or targets?
  3. Will it affect environmental resources, which are protected by laws or policies, e.g. Natura 2000 habitats, species, landscapes, water resources, agricultural resources and cultural sites, etc.?

4. Could it lead to impacts on environmental resources, which, although not legally protected, are important or valuable?

As a follow on from the preparation and evaluation of the previous sections of the report, ie baseline data and trends, existing significant issues, types and scale of development likely to impact on the environment, environmental vulnerabilities, the above questions were considered in determining significance of environmental effects identified

- Where the strategic objective or policy included in the draft plan emanates from a higher level or parallel plan. Where the nature of the impact depends on decisions that have been made or will be made at;
  - a higher policy level the symbol ↑ was used (e.g. NSS, RPG, NDP, etc.)
  - a lower policy level the symbol ↓ was used (e.g. LAP, AAP, etc.)
  - parallel policy from other plans, the symbol → will be used. (e.g. Rural Water Programme, Waste Management Plan, County Development Board Strategy, etc.)

It was not necessary to assess the impact of such objectives and policies on the environment at Development Plan SEA level.

- A set of assessment matrices for the overall settlement strategy initially and then for the range of policies to be included in the Plan were presented to the internal working group for consideration. Agreement was reached in the determination of environmental significance for all cases.
- Suggested alternatives, mitigation, offsetting, etc to the potential identified significant effects were raised for discussion, with the Steering Group and amendment to the Plan were suggested where required.

This approach was used at each stage that new policy or changes to the Draft were proposed; from presentation of the Draft Plan to the Elected Members - to the final amendments prior to final adoption of the Plan.

## **6.2 SUMMARY OF LIKELY SIGNIFICANT EFFECTS OF IMPLEMENTING THE PLAN ON THE ENVIRONMENT AND MEASURES PROPOSED TO PREVENT, REDUCE OR OFFSET**

### **6.2.1 Introduction**

The full matrix and assessment of policies against environmental objectives is included in Appendix One of this report. A summary of the outcome of this assessment is provided in this section.

Since the SEA process was intended to inform policy as it is created, the Plan policies were formulated in accordance with the findings of the SEA process and as a result they are for most part already environmentally sustainable.

In accordance with the legislation, the likely significant effects on the environment of implementing the Plan are summarised as follows under headings that include all of the issues required to be covered. Potential significant positive environmental effects have been highlighted as well as potential significant negative impacts and full details of these impacts can be seen in the matrix in Appendix One. The interrelationship between factors is given under the relevant sections.

Depending on the level of significance, which was determined based on the scale and cumulative nature of the potential impact, measures to offset or mitigate against significant negative environmental effects have been provided. Some of the potential effects discussed below are likely to be less significant than others. For those with a higher level of significance, a recommendation has been made to remove or alter the policy so as to prevent or reduce the impact if possible.

## **6.2.2 Biodiversity, Flora, Fauna**

### **Service Areas for N6**

Policy 'to co-operate with the National Roads Authority to identify the need for service areas for motorists along the route of the N6 dual carriageway and to implement proposals for provision'. Depending on the location of the service areas this could result in a significant impact to biodiversity, flora and fauna and potentially to habitats and species, such as intact bog to the east of Athlone, hedgerows and other habitats.

To offset this potentially significant impact, a policy has been included in the Plan to ensure that any such development should not damage habitats or species of value and should be developed with minimal impact to biodiversity, flora and fauna. Major infrastructural and motorway-related developments should reflect the local biodiversity value within which they are sited, using screening and planting with native species of local provenance and design should respect the landscape character.

### **Rural enterprise and agricultural development**

The policy to "sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise", depending on the nature and scale of development may impact upon landscape and possibly will result in the removal of habitats and impacts to biodiversity, flora and fauna. Impacts to biodiversity, flora and fauna through objectives to resist the loss of hedgerows and to promote planting with species of local provenance.

### **Mullingar Town Plan**

Rapid large-scale population growth in Mullingar will require the development of previously undeveloped greenfield lands that are zoned, resulting in a loss of biodiversity to a certain extent due to the removal of habitats. Large areas that will be subject to new development in Mullingar will be subject to Local Area Plans, which will include objectives for amenity, tree planting and protection of natural features. In this regard, this issue will be dealt with in greater detail through the SEA process at Local Area Plan stage.

## **6.2.3 Population and Human Health**

Impacts to population and human health may occur as a result of reduction in general amenity, inadequate service provision such as wastewater treatment and public transport and a deterioration in landscape quality, cultural heritage, water or air quality. In this regard, issues relating to population and human health are dealt with throughout the section.

### **Scale of Population Growth**

An influx of large numbers of new residents to Mullingar town and other towns and villages will affect communities and, if not coupled with a comprehensive strategy to provide for adequate amenity, community facilities and employment opportunities, new residents will have to travel elsewhere for work or leisure, increasing unsustainable transport patterns. This will be dealt with through Local Area Plans for new development areas in Mullingar and through village plans, which will ensure that development is phased to ensure that services are provided in line with development through policies and objectives to provide and improve services.

Townscape quality and amenity could also be affected due to the scale of development proposed in Mullingar, Moate and other settlements and policies and objectives are included in the Plan to offset such potential impacts through traffic management, standard of urban design, environmental improvement schemes, open space and green linkages and protection of our built and natural heritage.

#### **6.2.4 Water Resources**

##### **Unserviced Settlement Policy**

The 'Unserviced Settlement' policy aims to direct rural residential development in a sustainable pattern, concentrating development in designated centres, to sustain rural communities and rural facilities such as schools and shops and to cater for the demand for single site housing in a rural setting.

The proposed unserviced settlements are as follows:

- Athlone Area; Baylin, Castledaly, Toberclaive, Ballynahown,
- Coole Area; Streete, Crookedwood, Drumcree, Castletown-Finnea, Lismacaffrey, Archerstown
- Kilbeggan Area; Loughnavalley, Dysart, Moyvore, Mount Temple, Tang, Horseleap, Streamstown
- Mullingar Area; the Downs, Rathconrath, Taghman, Gainstown, Ballinea and Milltown

Interim data in relation to the vulnerability of groundwater to pollution in the county has recently become available from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County. This information shows areas in the county that are classed as 'extremely' or 'highly' vulnerable to groundwater pollution. Some of the proposed unserviced settlements are located within these vulnerable areas.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts are likely, based on most recent information available; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that the following settlements be removed from the unserviced settlement policy in the CDP:

- Settlements located in areas of 'extreme' groundwater vulnerability: Crookedwood, Taghmon, Tang, Loughnavalley and Mount Temple
- Settlements located in areas of 'high' groundwater vulnerability: Castletown-Finnea, Horseleap, Streamstown, and Baylin.

The reason for this recommendation is that locating a number of new houses in a vulnerable area for groundwaters, without water and wastewater treatment services and using on-site wastewater treatment systems instead, will have a cumulative effect of a significantly increased risk of groundwater pollution and potential impacts to public health as a result.

The full unserviced settlement policy should be subject to a complete review when final conclusive data is released from the GSI as part of preparation of a complete Groundwater Protection Scheme for the county. The River Basin District Management Plans to be produced by 2009 under the Water Framework Directive 2000 may also require a review of the unserviced settlement policy.

##### **Rural Housing Policy and Water**

See 'Rural Housing Policy' in Section 6.2.7

##### **Mullingar Wastewater Treatment Capacity**

The large scale population growth and development proposed for Mullingar town will place pressure on existing infrastructure and existing wastewater treatment will not be sufficient to deal with this growth. It has been identified that this requires review of existing foul and surface water drainage system to include review of capacity and condition of network, storm overflows, assessment of future development areas, capacity of the river Brosna, the capacity of the waste water treatment plant and pumping stations and the effect of phosphate loading on Lough Ennell. Mullingar Sewerage Improvement Scheme is planned, with funding allocated under the Water Services Investment Program 2005 – 2007, which will offset the

issue of capacity and condition of existing system and prevent future impacts of water pollution and phosphate loading to Lough Ennell and the River Brosna.

#### **Rural Enterprise and agricultural development**

Rural enterprise and agriculture, may result in an increased risk of water pollution depending on the nature, scale and intensity of development. Such impacts may be offset by policies for the implementation of agricultural bye-laws, Water Framework Directive, Nitrates Directive, Septic Tank Bye-laws if adopted, compliance with Cross-compliance Regulations and Use of Sludge Regulations.

#### **Wastewater Treatment Capacity to support development provided for by the Settlement Strategy**

Growth of these towns is not currently supported by adequate wastewater treatment; however objectives are contained in the Plan to upgrade wastewater treatment capacity at Kilbeggan, Kinnegad, Moate and Coole/Castlepollard

Limited wastewater treatment capacity may increase risks to water quality in other areas identified as growth centres in the Settlement Strategy. Objectives are included in the Draft Plan, which will offset this risk; to upgrade wastewater treatment capacity at Rochfortbridge, Clonmellon, Tyrellspass, Delvin, Collinstown, Ballymore, Multyfarnham, Milltownpass, Coole and Glasson. Future proposals for increasing wastewater treatment capacity are also included as objectives for Killucan, Raharney and Ballynacarrigy.

#### **6.2.5 Soil and Material Assets**

##### **Flood risk due to increased surface water run-off in Moate**

Increased development of Moate will increase surface water runoff and flood risk, however an objective is contained in the Plan to implement a flood relief scheme in Moate.

##### **Service and Rest Areas for N6**

Development of service areas at out-of-town centre locations will require that greenfield lands be developed and will impact on the viability of nearby urban centres. However, this issue will be determined at national level through the NRA and therefore cannot be assessed at County Development Plan level.

#### **Extractive Industry and Esker Systems**

The policy "to ensure adequate supplies of aggregate resources to meet the future growth needs of the County and to facilitate the exploitation of such resources where there is a proven need for a certain mineral/aggregate" if included without the previous policy; "to protect areas of geological or geomorphological interest, high landscape or amenity value, areas of importance for biodiversity, flora or fauna, surface water and groundwater resources and important aquifers, important archaeological features from inappropriate development", would place pressure on valuable eskers to be exploited for their aggregate potential. Therefore, the potentially significant negative impacts of implementing this policy are offset by the previous policy.

#### **6.2.6 Cultural Heritage and Landscape**

##### **Rural enterprise, agriculture and rural development in general**

The policy to "sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise", depending on the nature, scale, siting and design of development may impact upon landscape character. Impacts to landscape may be offset through policies contained in the Landscape Character Assessment, Rural Design Guidelines and policies for general landscape protection, siting of development and screening and planting as contained in the Plan.

## **Wind Energy Development**

Wind energy developments, if unsuitably sited in sensitive areas for biodiversity or landscape or close to housing could result in significant negative impacts. This issue is addressed through the identification of areas suitable and unsuitable for wind energy development as informed through the Landscape Character Assessment and policies for such development address the sensitivity of areas, siting etc. Applications for wind energy development will be dealt with on a case by case basis through the development management process, using development management standards set out in the Plan. The potential for significant environmental impacts from larger scale developments will be dealt with through EIA at planning application stage.

## **Rural Housing Policy and Landscape**

See 'Rural Housing Policy' in Section 6.2.7

### **6.2.7 Air and Climate Factors**

#### **Zoning of excess land for residential use in Delvin and Clonmellon**

- Existing zoning in Delvin allows for a provision of an additional population of 2431 people, potentially bringing the population of this village to in excess of 2789 + people by 2014 if all this land were to be developed within the period of the plan.
- Existing zoning in Clonmellon allows for a provision of an additional population of 919 people, potentially bringing the population to in excess of 1610 + people by 2014.

Provision for this scale of population growth in such a short space of time without employment and public transport would potentially have a wide range of significant environmental effects, depending on the scale of development, such as negative impacts to air quality through increasing the need to travel by private car, population and human health by encouraging unsustainable transport patterns, impacts on townscape quality with rapid change to landscape and biodiversity and with rapid development of greenfield lands. This reflects the situation in the existing Local Area Plans for these settlements as no new zonings have been proposed.

The relevant Strategic Environmental Objectives that the excessive zoning conflicts with are P1; 'to facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution', C3; 'to enhance the landscape and townscape quality and minimise negative visual impacts from development' and A1; 'to reduce the need to travel by private car'.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur, it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that excess residentially zoned land in Delvin and Clonmellon should be de-zoned in the County Development Plan 2008-2014, to ensure the logical and sustainable development of these areas.

#### **Rural Development and reliance on the private car**

Settlement strategy Tiers 3 and 4 in particular will allow for population growth in areas with a limited employment base and minimal provision for public transport use. This will increase the need to travel by private car, conflicting with Strategic Environmental Objective A1.

In addition, policies to support rural enterprise and rural-based tourism industries will result in an increased need to travel to such areas without the option of sustainable modes of transport.

An objective has been included in the Plan to explore options to increase provision for public transport services in rural areas and to support developments of the rural bus initiative and any other sustainable transport initiatives.

The policy to “sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise” may actually help to reduce dependence on the private car by providing employment close to rural dwellings to a certain extent.

Policies to improve public transport service provision and sustainable land use and transportation planning policies in general are included in the Plan and will impact positively by reducing the need to travel by private car, improving access to services of people from all sectors of society and reducing air pollution.

### **Rural Housing Policy**

One-off rural housing raises a number of environmental concerns and if it is not ‘rural generated’; necessary to sustain rural communities and economies; it can be considered unsustainable. These environmental concerns include:

- a) Housing which is urban generated: where occupiers are working, at school, accessing services and meeting family and friends, etc., in urban areas and elsewhere; generates car journeys and results in unsustainable transport patterns. Such development cumulatively results in undesirable environmental impacts, including greenhouse gas emissions and use of non renewable resources, and is contrary to our obligations under the Kyoto agreement. In contrast, for rural generated housing, some of these journeys e.g. to work or family, will be within the local area.
- b) Individual rural houses that are poorly sited and screened or located in sensitive or exposed environments or landscapes will negatively impact on the quality of the area. Cumulatively a large volume of rural housing development over time, however sensitively sited will impact visually upon landscape and natural amenity.
- c) Single rural houses that rely on individual on-site wastewater treatment place surface and ground water resources under a significant risk of pollution and can be particularly harmful if located in areas of groundwater vulnerability.

The Sustainable Rural Housing Guidelines (2005) issued by the DoEHLG advises on the type of housing development that should be considered as rural generated; which should take account of the scope and extent of the housing needs to be considered in the area – whether beside a large town or more removed from such a centre; the categories of persons the guidelines cite as comprising rural generated are those who are an intrinsic part of the rural community, e.g., have lived for substantial periods of their lives in the area as members of the established rural community; or persons working full-time or part-time in the rural area e.g., in farming or natural resource related occupations or teaching in a rural school.

The Development Plan policy allows for persons in the following categories:

1. Persons who are actively engaged in agriculture, horticulture, forestry, bloodstock and peat industry.
2. Members of farm families seeking to build on the family farm.
3. Landowners and members of landowners’ families (landowner for this purpose being defined as persons who owned the land in question at the date of adoption of the draft County Development Plan 2000).
4. Persons employed locally whose employment would provide a service to the Local Community.
5. Persons who have personal, family or economic ties within the area, including returning emigrants.

Category five extends the categories beyond the Guidelines range by allowing for persons who have undefined personal, family or economic ties within the rural area. While, the Guidelines represent policy taken at a higher level and therefore are more appropriately dealt

with at that higher level, the extension of the categories of qualifying persons beyond the guidelines must be considered in this SEA.

Since the 'ties' within the rural area are undefined, this category could be loosely applied and rural housing that is not necessary to sustain rural communities and economies, and which is therefore unsustainable, may be permissible. This will exacerbate environmental impacts in relation to the effects of rural housing which are considered potentially highly significant and cumulative long term, permanent, negative impacts.

Since rural housing, however necessary to sustain the rural community or economy may still result in negative environmental implications; policies and objectives have been formulated and included in the Plan to address such potential impacts. These include those for High Amenity Areas, groundwater protection, landscape protection and the conservation of our natural heritage. Proposals for one-off rural housing will be dealt with on a case-by-case basis and policy is contained in the Plan to ensure that proposals contributing to ribbon development, those impacting on sensitive areas or environments or those likely to pose a significant threat to surface or groundwater resources will be strictly regulated. Rural Design Guidelines have been produced which will help to increase the quality of proposals so that impacts to the landscape will be minimised. An objective is included to encourage the development of sustainable rural transport initiatives with a view to reducing unsustainable transport patterns.

#### **High Amenity Area**

The High Amenity Areas for Loughs Ree, Derravaragh and Sheelin are reduced, removed, or reviewed and the buffer zone for Lough Ree removed. This result in negative impacts on the biodiversity environmental protection objectives, to conserve and promote the diversity of habitats and species and the protection, conservation and enhancement of habitats, species and areas of national or international importance.

It is noted that the extension of the Lough Ree High Amenity Area into parts of the former buffer zone will result in positive impacts on the biodiversity environmental protection objectives.

#### **Provision for sustainable transport services to serve expanding population**

Large scale population growth without corresponding employment uses in the town centre will increase the need for the Mullingar population to travel elsewhere for employment, eg Athlone and Dublin. While there is a train service to Dublin, there is currently no sustainable mode of transport to Athlone, increasing reliance on the private car. Policies are included in the Plan to offset this potential impact by supporting the re-opening of the Mullingar to Athlone rail line and other public transport improvements, developments and services.

#### **Development along National Routes**

"To restrict development accessing national routes in cooperation with the NRA" This policy restricts development with a direct access point onto a national route. This would not necessarily control development that would have an impact on the national route such as development at interchanges; permitting such development could affect the carrying capacity, safety and efficiency of the national road network and could result in backed up traffic and associated negative environmental implications of air pollution.



## **7 MONITORING**

### **7.1.1 Introduction**

As part of the Strategic Environmental Assessment process, measures envisaged for monitoring the likely significant effects of implementing the Plan must be included in the Environmental Report. The two year progress review of the implementation of the Development Plan will include monitoring of significant environmental effects.

Monitoring is often based on indicators, which measure changes in the environment, especially changes which are critical in terms of environmental quality. The Department of Environment Heritage and Local Government SEA Guidelines state that indicators that can be easily and realistically measured should be used and this has been used. "Environmental indicators are key statistics, which describe an environmental issue. Their purpose is to communicate information on environmental issues in a simplified manner and over time to create a benchmark against which future progress towards sustainable development can be measured. To be effective they should be representative of the issue and be based on scientifically valid information. In this manner they can support policy development and reflect the interrelationship between society, the economy and the environment."

Several kinds of indicators may be used to fulfil particular functions and measure the quality/quantity of environmental resources:

1. State of the environment indicators reflect environmental quality, or quantity of physical and biological or chemical phenomenon;
2. Stress indicators reflect development effects;
3. Performance indicators may be used to evaluate long-term achievements in environmental management and protection;
4. Sustainable development indicators introduce a new dimension to the provision of information, in that they seek to describe and measure key relationships between economic, social and environmental factors.

In all cases, indicators should both quantify and simplify information, thereby making it more accessible to policy-makers and the public.

Where new or improved monitoring measures come to light during the course of the Plan review they will inform monitoring for SEA, to ensure that monitoring of effects during the course of implementing the plan can be meaningful and effective.

The following measures are proposed as part of this SEA process, to monitor the effects on the environment of implementing the Plan, presented in terms of the achievement of the environmental protection objectives and the impact on the environmental factors that the SEA legislation requires to be considered.

### 7.1.2 Monitoring Proposals and Environmental Indicators

<b>Biodiversity, Flora and Fauna</b>		
Strategic Environmental Objectives	Indicators	Targets
<p>B1: Conserve and promote the diversity of habitats and species</p> <p>B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks</p>	<ol style="list-style-type: none"> <li>1. Removal of Hedgerows (using baseline data from Hedgerow Survey)</li> <li>2. Harvesting of Intact Bog per hectare (using baseline data from Peatland Study)</li> <li>3. Percentage of broadleaf and native tree species planted</li> <li>4. Development within esker systems, including extractive industries (using data from Esker Study)</li> <li>5. Level of injurious developments permitted in areas of national or international importance or affecting habitats or species of importance, including fish species</li> <li>6. Designation of additional areas of national or international biodiversity, geodiversity value for protection</li> </ol>	<ol style="list-style-type: none"> <li>1. No loss of hedgerow habitats</li> <li>2. No loss of intact peatland habitats</li> <li>3. Retention of biodiversity and geodiversity value of all eskers systems of value</li> <li>4. 30% broadleaf afforestation</li> <li>5. Retention of value of areas of national and international importance and no developments permitted that would impact upon habitats or species of importance</li> <li>6. Designation of additional areas worthy of protection, such as valuable esker systems</li> </ol>

<b>Population and Human Health</b>		
Strategic Environmental Objectives	Indicators	Targets
<p>P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution</p>	<ol style="list-style-type: none"> <li>1. Notices served under Noise Regulations</li> <li>2. Commuting Trends from CSO data</li> <li>3. Environmental Improvement Schemes implemented</li> <li>4. Increased availability of public transport facilities</li> <li>5. Increase in walking and cycling to school / work using the 2006 census as a baseline.</li> <li>6. Drinking Water Quality</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduced levels of incidences of noise pollution</li> <li>2. Increased provision of public transport services to as large a portion of the County's population as possible</li> <li>3. Implemented Environmental Improvement Schemes to the satisfaction of communities</li> <li>4. Reduced private car usage</li> <li>5. Improvement or at least no deterioration in levels of compliance with drinking</li> </ol>

	<p>monitoring</p> <p>7. Number of and area of public parks and walkways maintained by the Council and available and accessible for public use</p> <p>8. Quantities of public and private open space provided as part of new development</p>	<p>compliance with drinking water quality standards</p> <p>6. Increased public amenity throughout the county</p>
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Water Resources		
<p>Strategic Environmental Objectives</p> <p>W1: Promote water conservation and sustainable water use based on long term projections of available water resources</p> <p>W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation</p> <p>W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>Changes in water quality identified through water quality monitoring as a result of implementation of the Water Framework Directive, Nitrates Directive, Groundwater Directive and Groundwater Protection Scheme when implemented, Use of Sludge Regulations, Cross-Compliance Regulations</li> <li>Compliance with proposed Septic Tank By-Laws (for Lough Owel and Lough Lene) if implemented</li> <li>Changes in water quality identified as a result of monitoring under IPPC licensing or Waste Licensing</li> <li>Changes in water quality identified as a result of Lake Water Sampling and River Water Sampling</li> <li>Increased or decreased number of Blue Flag designations and compliance with the Bathing Water quality standards (EPA)</li> <li>Percentage of farms (expressed as a % of total farmland) participating in the Rural Environmental Protection Scheme (REPS)</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>Improvement or at least no deterioration in surface or ground water quality</li> <li>Improvement or at least no deterioration in lake water quality</li> <li>Improvement or at least no deterioration in ground water quality</li> <li>Improvement or at least no deterioration in drinking water quality</li> <li>Retention of existing 'Blue Flag' designations and reinstatement of 'Blue Flag' designations at lakes previously designated,; Lough Ennell and Lough Lene and other designations granted</li> <li>Increase in the area of land managed under the scheme</li> </ol>

Soil and Material Assets		
<p>Strategic Environmental Objectives</p> <p>S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands</p> <p>S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill</p> <p>S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, watercourses and all other physical and social infrastructure</p> <p>S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>1. % Of new applications granted on brownfield or infill sites</li> <li>2. Tonnage of household waste collected sent to landfill</li> <li>3. Tonnage of household waste collected which is sent for recycling</li> <li>4. Instances of flooding which cause damage to property (not land).</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>1. Specified percentage of new applications granted to be on brownfield lands or as infill development<sup>1</sup></li> <li>2. Reduced waste to landfill, increased waste sent for recycling</li> <li>3. No increases in flooding which causes damage to property</li> </ol>

Cultural Heritage and Landscape		
<p>Strategic Environmental Objectives</p> <p>C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate</p> <p>C2: Conserve and enhance valued natural and historic landscape features</p> <p>C3: Enhance landscape and townscape quality and minimise negative visual impacts from development</p> <p>C4: Protect and enhance the quality, character and features of waterways</p> <p>C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>1. Number of Structures included in the RPS or areas designated as ACAs</li> <li>2. Number of structures on the RPS or within ACAs damaged or demolished as a result of development</li> <li>3. Number of monuments or cases in areas of archaeological potential in the Record of Monuments and Places that have been recorded or subjected to physical/geophysical exploration/excavation as a result of an application for planning permission</li> <li>4. Number of monuments in the RMP or other monuments that have been damaged, including their fabric or setting, by development granted planning permission</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>1. Increase or no change in the number of valued structures afforded protection</li> <li>2. No damage occurring to structures or monuments, or their character or setting, due to development</li> <li>3. Increase in exploration and excavation resulting in discoveries of archaeological potential and or new inclusions to the RMP</li> <li>4. No damage or deterioration to the quality, character and features of waterways</li> <li>5. No damage or deterioration to the quality, character or distinctiveness of geological and geomorphological systems, sites and features</li> </ol>

<sup>1</sup> A baseline survey of brownfield lands suitable for redevelopment is required in order to set a reasonable target in this regard

	<p>granted planning permission</p> <p>5. Number of archaeological objects found catalogued and retained under local authority safekeeping</p> <p>6. Number of sites or features of heritage value open to or accessible by the public with meaningful interpretation of their value and importance</p> <p>7. Amount of development impacting on identified esker systems of value</p>	
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Air and Climatic Factors		
Strategic Environmental Objectives	Indicators	Targets
<p>A1: Reduce the need to travel by private car</p> <p>A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change</p> <p>A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms</p> <p>A4: Reduce all forms of air pollution and promote tree planting where appropriate</p>	<p>1. Commuting Trends from CSO data</p> <p>2. Use of public transport – numbers using rail and bus services</p> <p>3. Level of provision of and improvement to walking and cycling facilities and networks</p> <p>4. Percentage of broadleaf and native tree species planted</p> <p>5. Number and scale of wind energy and biomass developments granted planning permission</p> <p>6. Levels of sulphur dioxide, nitrogen oxides and particulate matter found as a result of periodic monitoring carried out by the EPA.</p>	<p>1. Increased provision of and use of public transport</p> <p>2. Reduced private car use/ownership</p> <p>3. Increased public rights of way and established and maintained walking and cycling routes</p> <p>4. 30% broadleaf afforestation</p> <p>5. Increased proportion of energy generated within the county from renewable energy sources – EU targets reached</p> <p>6. Maintenance of low levels or levels within EU limits of sulphur dioxide, nitrogen oxides and particulate matter</p>