



LIMERICK DEVELOPMENT PLAN 2022-2028

Background Paper
Environment, Heritage,
Landscape
& Green
Infrastructure

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1.0 – Introduction

Limerick’s heritage is one of depth and complexity, consisting of elements of both the natural and built environment, and the cultural vibrancy of the City and County. It takes into account landscapes, habitats, built environment and archaeology, and indeed many combinations of these. In the preparation of the proposed Limerick Development Plan 2022 – 2028, the combination of land use planning and heritage and environmental issues will be considered. Preservation of our natural resources not only enriches the identity of our City and County for generations to come, but also provides for a unique selling point in terms of tourism and the local economy.

Many of the natural heritage designations, such as Special Areas of Conservation and Special Areas of Conservation have been designated by European legislation and Natural Heritage Areas by national legislation. Protection and conservation of our natural heritage assets is critical in terms of enhancing our natural resources, as well as protecting habitats and species in their natural environment. 13% of the land take of Limerick, comprises of designated areas, including Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas.

Protection of biodiversity, which is threatened globally and locally by demands of people and increasingly by climate change is a significant challenge. Loss or damage to sites and places of biodiversity value caused by changes in land use practises and pressure for development is a constant battle. The proposed Limerick Development Plan will consider Limerick's natural heritage in its various forms, with all the diversity of habitats, which occur within the City and County, both urban and rural. Habitats ranging from those associated with the estuary in the north of the county, urban habitats, through to those in agricultural settings throughout the county and mountain habitats in the Galtee Mountains in the south east of the County.

Built and archaeological heritage in Limerick ranges from the many smaller sites of local and regional importance to those of national significance. It includes dwellings, commercial and public buildings, national monuments, underwater and buried archaeology and their physical and cultural settings. The proposed Development Plan will need to consider not only those structures and sites that have been statutorily listed on the Record of Protected Structures, but all man-made assets that have historical, aesthetic and cultural value, even though they may not be officially protected.

Green infrastructure has many definitions, however the best possible definition, is that, it is the strategically planned network of interconnected natural areas and other open spaces that conserve or replicate natural ecosystem functions and provides a wide array of benefits to people and wildlife. Green Infrastructure helps ensure the sustainable provision of ecosystem goods and services, while increasing the resilience of ecosystems. The concept is central to the overall objective of ecosystem restoration, which is now part of the EU 2020 biodiversity target. Green Infrastructure also helps in addressing mitigation and adaptation to climate change. Green Infrastructure planning promotes integrated spatial planning by identifying multifunctional zones and by incorporating habitat restoration measures and other connectivity elements into various land-use plans and policies, such as linking peri-urban and urban areas.

2.0 – Legislative and policy background

This section outlines the main European and national policies on natural and built heritage and green infrastructure.

2.1 – European Union Biodiversity Strategy 2030

This has been recently adopted by the European Commission and contains specific commitments and actions to be delivered by 2030, including:

- Establishing a larger European Union wide network of protected areas on land and at sea, building upon existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value;
- An European Union Nature Restoration Plan - a series of concrete commitments and actions to restore degraded ecosystems across the EU by 2030, and manage them sustainably, addressing the key drivers of biodiversity loss;
- A set of measures to enable the necessary transformative change: setting in motion a new, strengthened governance framework to ensure better implementation and track progress, improving knowledge, financing and investments and better respecting nature in public and business decision-making;
- Measures to tackle the global biodiversity challenge, demonstrating that the EU is ready to lead by example towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity.

2.2 – European Green Infrastructure Strategy

The EU Commission adopted an EU-wide strategy to promote green infrastructure, to restore the health of ecosystems and ensure that natural areas remain connected together, and allow species to move across their entire natural habitat, so that nature keeps on delivering its many benefits to us. The strategy promotes the deployment of green infrastructure across Europe as well as the development of a Trans-European Network for Green Infrastructure in Europe, a TEN-G network, equivalent to the existing networks for transport (TEN-T), energy and ICT. In addition to ecological benefits, this can have health benefits for EU citizens, provide jobs, and boost local economies.

The development of green infrastructure is seen as a key step towards the success of the EU 2020 Biodiversity Strategy. The Strategy's target requires that *'by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems'*. Green infrastructure contributes to all 6 targets of the Strategy - in particular the full implementation of the Birds and Habitats Directive (target 1) and to maintaining and enhancing biodiversity in the wider countryside and the marine environment (targets 3 and 4).

2.3 – National Planning Framework

The National Planning Framework (NPF) published in 2018, is the high-level strategic plan for shaping the future development of the country to the year 2040. The plan proposes by 2040, there will be approximately an extra one million people living in Ireland, and this additional growth will require hundreds of thousands of jobs and new homes. The NPF policies are laid out in what are called National Policy Objectives (NPOs). Some of the

important NPOs, as they relate to heritage, environment and green infrastructure are outlined below. There is a strong emphasis on heritage in the NPF, including its protection, when viewed in the light of development. This is stated in NPO 23 which set out to facilitate the development of the rural economy through supporting a sustainable and economically efficient agricultural and food sector, together with forestry, fishing and aquaculture, energy and extractive industries, the bio-economy and diversification into alternative on-farm and off-farm activities, while at the same time noting the importance of maintaining and protecting the natural landscape and built heritage, which are vital to rural tourism.

National Policy Objective 60 seeks to conserve and enhance the rich qualities of natural and cultural heritage of Ireland in a manner appropriate to their significance.

Several National Policy Objectives relate to Green Infrastructure, which has strong links with natural heritage. In Chapter 9 it has as an aim of the NPF to protect, conserve and enhance our natural capital, through green infrastructure planning, as a means of protecting and valuing our important and vulnerable habitats, landscapes, natural heritage and green spaces. In this chapter also, the NPF seeks support for green adaptation, which seeks to use ecological properties to enhance the resilience of human and natural systems in the face of climate change, such as creation of green spaces and parks to enable better management of urban micro-climates.

Sustainable urban drainage systems (SUDS) can form important elements of green infrastructure, if properly designed and can also help to protect and enhance water quality. The NPF contains a specific National Policy Objective, in relation to SUDS, NPO 57 which supports the integration of sustainable water management solutions, such as Sustainable Urban Drainage (SUDS), non-porous surfacing and green roofs, to create safe places.

The NPF also states that green infrastructure planning will inform the preparation of regional and metropolitan strategies and development plans by:

- Assisting in accommodating growth and expansion, while retaining the intrinsic value of natural places and natural assets;
- Providing increased certainty in planning by proactively addressing relevant environmental issues;
- Encouraging more collaborative approaches to plan-making by enabling examination of the interactions between future development requirements and the capacity of receiving areas; and
- Ensuring that sufficient and well planned green spaces, commensurate in scale to long-term development requirements, are designated in statutory plans.
- It is also important to consider the interrelationships between biodiversity, natural heritage, landscape and our green spaces.

Green spaces and parks have an important role in contributing to the quality of life for citizens and sustainability of, our settlements. Green belts adjoining our urban areas also fulfil a strategic purpose, as a potential asset for future, planned development as an urban extension, particularly at a city scale.

National Policy Objective 62 seeks to identify and strengthen the value of greenbelts and green spaces at a regional and city scale, to enable enhanced connectivity to wider strategic networks, prevent coalescence of settlements and to allow for the long-term strategic expansion of urban areas.

2.4 – National Biodiversity Action Plan 2017 – 2021

The National Biodiversity Action Plan contains a number of relevant objectives and actions, specifically aimed at local authorities and other public bodies.

Objective 1 – Mainstream biodiversity into decision-making across all sectors;

1.1.3. All Public Authorities and private sector bodies move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure;

1.1.6. Local Authorities will review and update their Development Plans and policies to include policies and objectives for the protection and restoration of biodiversity;

1.1.7. Develop a Green Infrastructure at local, regional and national levels and promote the use of nature based solutions for the delivery of a coherent and integrated network;

Objective 6 – Expand and improve management of protected areas and species;

6.2.1. Increase connectivity of the protected areas network using appropriate buffer zones, corridors, stepping stones and/or flyways.

2.5 – The All Ireland Pollinator Plan

One third of our bee species are threatened with extinction in Ireland. This is because we have drastically reduced the amount of food (flowers) and safe nesting sites in our landscapes. The **All-Ireland Pollinator Plan** is about all sectors, from farmers to local authorities, to schools, gardeners and businesses, coming together to try to create an Ireland where pollinators can survive and thrive. Limerick City and County Council have signed up to the objectives of the All Ireland Pollinator Plan and are actively seeking to deliver on the objectives set out in the Plan.

2.6 – Regional Spatial and Economic Strategy

The Regional Spatial and Economic Strategy (RSES) is the regional policy document for the Southern Region and sets out the policy context for the next 12 years for the region. Similar to those of the NPF, policy objectives are expressed as Regional Policy Objectives (RPOs). The RPO's highlighted below related to heritage and environment.

Regional Policy Objective 54 – Tourism and the Environment Development of new or enhanced tourism infrastructure and facilities should include an assessment of the environmental sensitivities of the area, including an Environmental Impact Assessment

(EIA); Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA), if required in order to avoid adverse impacts on the receiving environment. Where such tourism infrastructure or facilities are developed, the managing authority/agency should ensure that effective monitoring protocols are put in place to monitor and assess the ongoing effect of tourism on sensitive features with particular focus on natural, archaeological and built heritage assets.

Similar to the NPF the RSES requires that green infrastructure, ecosystem services and nature based solutions be integrated into land use planning and development plans. The relevant policy objectives are given below:

- Regional Policy Objective 110 - Ecosystem Services - It is an objective that an ecosystem services approach will be incorporated into the preparation of statutory land use plans in the region.
- Regional Policy Objective 117 - Flood Risk Management and Biodiversity - It is an objective to avail of opportunities to enhance biodiversity and amenity and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned. Plans and projects that have the potential to negatively impact on Natura 2000 sites are subject to the requirements of the Habitats Directive.
- Regional Policy Objective 122 - Sustainable Drainage Systems (SUDS) - It is an objective to:
 - o Promote the integration of sustainable water management solutions such as the use of SUDS. Future Development Plans and Local Area Plans in the Region should include objectives and actions to encourage the integration of sustainable water management solutions such as the use of SUDS;
 - o Promote the diversion of surface water from combined sewers, where possible.
- Regional Policy Objective 123 - River Basin Management Plan and Spatial Planning – It is an objective to encourage the integration of river corridors with green infrastructure in settlements. The guidance document “Planning for Watercourses in the Urban Environment” published by Inland Fisheries Ireland provides an integrated watercourse protection strategy.
- Regional Policy Objective 124 Green Infrastructure
 - o It is an objective to promote the concept of connecting corridors for the movement of wildlife and encourage the retention and creation of features of biodiversity value, ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks, watercourses and wetlands. The RSES recognises the necessity of protecting such corridors and the necessity to encourage the management of features of the landscape that support the Natura 2000 network;
 - o Green infrastructure will be integrated into the preparation of statutory land-use plans in the Region, which will include identifying Green infrastructure and strengthening this network;
 - o All Development Plans and Local Area Plans shall protect, enhance, provide and manage Green infrastructure in an integrated and coherent manner

addressing the themes of biodiversity protection, water management and climate action; and should also have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species;

- Any future development of greenways, blue ways, peat ways, cycleway or walkways will include an assessment by the relevant authorities of any impacts that may arise from increased visitor pressures, in particular, on sensitive European sites and the design of the network will consider the provision of protective measures on sites sensitive to disturbance/visitor pressure.
- Regional Policy Objective 125 – Green Infrastructure Corridors
 - Transport infrastructure provides potential opportunities to act as Green infrastructure corridors. It is an objective to support local authorities acting together with relevant national infrastructure providers to co-develop infrastructural management plans to enhance biodiversity.
- Regional Policy Objective 126 – Biodiversity
 - Promote biodiversity protection and habitat connectivity both within protected areas and in the landscape through promoting the integration of green infrastructure and ecosystem services, including landscape, heritage, biodiversity and management of invasive and alien species in the preparation of statutory and non-statutory land-use plans. The RSES recognises the role of the National Biodiversity Data Centre through its Citizen Science initiatives;
 - Support local authorities acting together with relevant stakeholders in implementing measures designed to identify, conserve and enhance the biodiversity of the Region; seek and support the implementation of the All-Ireland Pollinator Plan, National Biodiversity Action Plan and National Raised Bog SAC Management Plan;
 - Local Authorities are required to carry out required screening of proposed projects and any draft land-use plan or amendment/variation to any such plan for any potential ecological impact on areas designated or proposed for inclusion as Natura 2000/European Sites and shall decide if an Appropriate Assessment is necessary, of the potential impacts of the project or plan on the conservation objectives of any Natura 2000/European Site;
 - Support local authorities to carry out, monitor and review biodiversity plans throughout the Region. Planning authorities should set objectives in their land use plans to implement and monitor the actions as set out in the National and County Biodiversity Plans, as the conservation of biodiversity is an essential component of sustainable development. Local authorities should address the issue of fisheries protection and invasive introduced species and encourage the use of native species for landscape planting in rural areas, in the review of their biodiversity plans;
 - Support local authorities to work with all stakeholders to conserve, manage and where possible enhance the Regions natural heritage including all habitats, species, landscapes and geological heritage of conservation interest and to promote increased understanding and awareness of the natural heritage of the Region.

- Regional Policy Objective 128 - All-Ireland Pollinator Plan 2015 – 2020

It is an objective to support the implementation of the All-Ireland Pollinator Plan 2015-2020. Local authorities should incorporate the actions of this Plan, when managing their parks, open spaces, roadside verges and all vegetation in a way that provides more opportunities for biodiversity, while being cognisant of the threat of the spread of invasive species.

There are many other environmental issues that need to be considered in the preparation of the proposed Limerick Development Plan 2022 – 2028. Issues including air quality, which is considered in:

- Regional Policy Objective 130 - Air Quality; It is an objective to:

- o Improve and maintain good air quality and help prevent harmful effects on human health and the environment in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions and promotion of measures that improve air quality including provision and management of green areas and vegetation;

Built heritage and archaeology are of significant importance and their content in the proposed plan will need to be updated. Regional Policy Objective 202 Natural Heritage, Biodiversity and Built Heritage assets, states the following; It is an objective to support initiatives that enhance and protect our Region's unique natural heritage, biodiversity and built heritage assets, recognising the contribution which education and outreach can play in developing understanding of biodiversity and heritage in our communities. Such initiatives should secure funding to support projects in the Region in line with the National Biodiversity Action Plan.

Regional Policy Objective 205 - Built Heritage

It is an objective to support targeted investment in the built heritage of our Region including the Built Heritage Investment Scheme and Historic Structures Fund to assist owners maintain our built heritage assets.

Regional Policy Objective 206 - Architectural Heritage

It is an objective to protect architectural heritage in statutory plans including a record of protected structures (RPS) and identification of groups of buildings/localities suitable to designation as Architectural Conservation Areas (ACAs). Local authorities should provide for monitoring and review of the RPS and ACAs including measures to prevent dereliction and to support re-use of built heritage.

Regional Policy Objective 207 - Archaeological Investigation

Where proposed development may have implications for recorded archaeological monuments /sites, zones of archaeological potential, or undiscovered archaeology, local authorities should ensure that decisions relating to development (including

infrastructure associated with broadband, telecommunications and renewable energy installation of services installation and major road/rail infrastructure) are informed by an appropriate level of archaeological investigation undertaken by qualified persons.

The RSES as outlined above, set out a series of policy objectives, which seek to preserve the natural and built heritage of the region, develop linkage and connections utilising green infrastructure networks, while seeking to enhance the quality of the environment. Striking a balance in terms of meeting the demands of the NPF, in terms of consolidating development and protecting the environment and conserving built and natural heritage can be a challenge.

3.0 – Biodiversity, Flora and Fauna

The proposed Limerick Development Plan 2022 – 2028 preparation process will consider available information on designated ecological sites and protected species, ecological connectivity (including possible links and corridors) and non-designated habitats. The research will also consider the use data sources, which would have been provided as part of local, project level development and assessments. These could include reports and assessments that would have been furnished to the Planning Authority, as part of planning applications, for instance, or prepared for Council activities and projects outside of planning, such as bridge or road projects. The information in these often covers non designated sites and is often more recent than the information in assessments carried out by official agencies or that in published works.

A Special Area of Conservation (SAC) is defined in the European Union's Habitats Directive (92/43/EEC), also known as the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora. A Special Protection Area (SPA) is a designation under the European Union Directive on the Conservation of Wild Birds. Under the Directive, Member States of the European Union (EU) have a duty to safeguard the habitats of migratory birds and certain particularly threatened birds. Together with Special Areas of Conservation (SACs), the SPAs form a network of protected sites across the European Union, called Natura 2000 sites. Often assessments concentrate on possible effects on Natura 2000 sites, such as Special Areas of Conservation and Special Protection Areas and not on Natural Heritage Areas (NHAs) and other national level ecologically designated sites, which often means that the non-designated habitats, those that surround us every day do not get the attention they deserve. The Environmental Report that will be produced as part of the Strategic Environmental Assessment process can deal with these habitats, thereby filling any gaps in information and informing the development plan.

Natural Heritage Areas (NHA) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They can be nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife, plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000. There are four NHAs designated in County Limerick, Lough Gay Bog (002454); Grageen Bog and Fen (002186); Moyreen Bog (002361) and Carrigkerry Bogs (002399).

Limerick contains a number of designated habitats under the Habitats (SACs) and Birds (SPAs) Directives. These are designated for the protection of specific species. However, in addition to preserving these habitats as essential elements of green infrastructure, it is important to identify the potential to create ecological corridors or linkages between sites to allow for the movement of species.

A particular case in point is the endangered and protected Lesser Horseshoe Bat. The Lesser horseshoe bat is an Annex II species under the Habitats Directive. County Limerick is a critical location for the lesser horseshoe bat in Ireland, because it is the county that still links the northern populations of this species in south Mayo/Galway/Clare with the southern population in south Kerry and west Cork. The lesser horseshoe bat is confined in Ireland to these six counties in the west, where it is totally dependent on a network of hedgerows, tree lines and stone walls to move between its roosting sites in old unoccupied buildings in summer and underground sites in winter. It is highly dependent on deciduous woodland and riparian vegetation for foraging, usually within 3km of its roost. It avoids bog and arable land and urban settings.

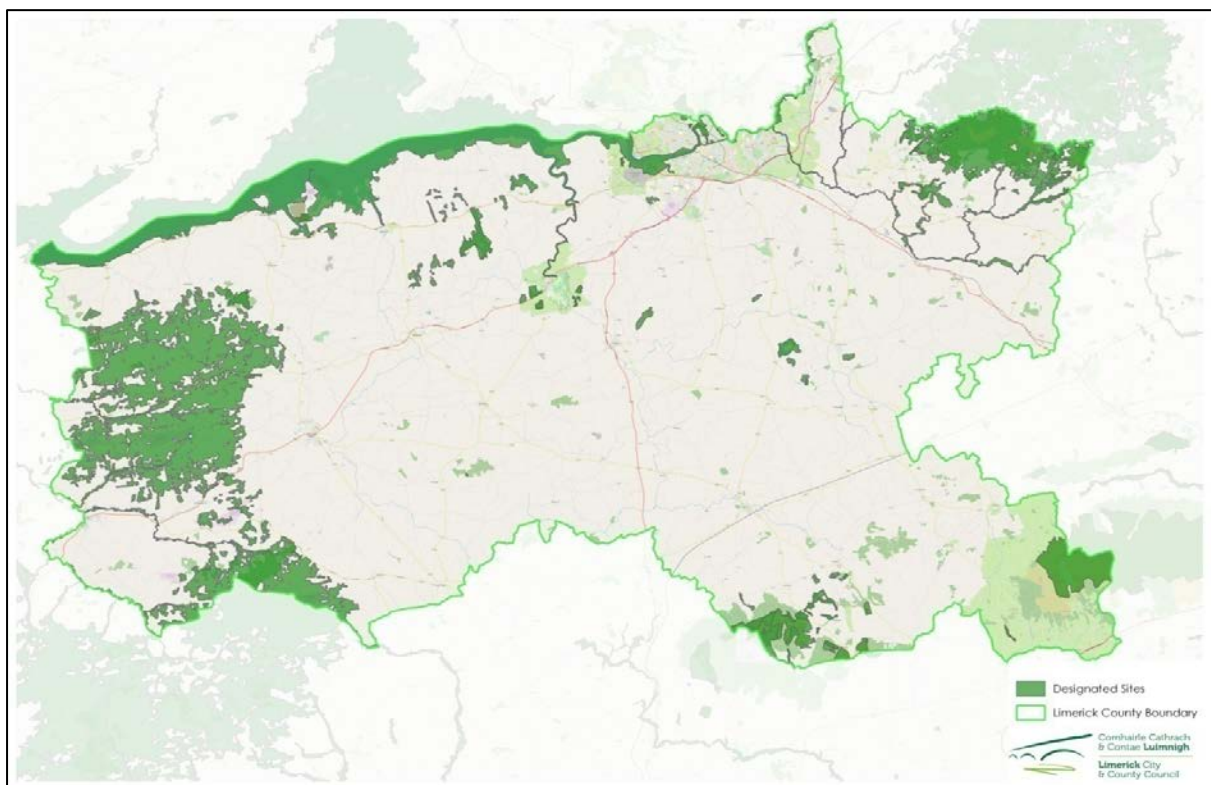


Figure 1 – Designated sites within Limerick City and County, including Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas

Proposed Natural Heritage Areas were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. These sites are of significance for wildlife and habitats. There are a number of proposed Natural Heritage Area in Limerick.

Ecologically sensitive areas located within the City and County; include aquatic and terrestrial ecological areas, which are part of the City and County's extensive network of watercourses and wetlands comprising:

Rivers, streams and riparian zones (such as River Shannon, Abbey River, Groody River, Mulkear River, River Mague, River Feale and Allaghaun River);

Loughs (such as Westfields, Lough Gur, Dohyle Lough); and

Bogs and fens (such as Knockalisheen, Griston Bog and Ellaha fen).



Figure 2 – Grageen bog and fen (002186) looking eastwards. This site lies within the Slieve Felim Special Protection Area, which has been designated for the hen harrier

In addition to SACs, SPAs and NHAs, other areas such as wildfowl sanctuaries will also be examined. One of the key ecological parameters is water quality and work carried out under the Water Framework Directive will be of particular importance. The Local Authority Water Protection Office (LAWPRO) will be consulted on an ongoing basis during the plan preparation. Other areas will also need to be considered such as wetlands, peatlands and flood plains. In relation to peatlands, the Irish Peatland Conservation Council (IPCC) produces a list of peatlands in each county and has a list of Limerick bog and fen habitats. With wetlands and flood plains being considered there are obviously linkages with the Strategic Flood Risk Assessment being carried out as part of the Plan preparation process. There is the potential to link this with the question of green infrastructure and ecological connectivity, ecological networks and zoning and this will be examined in the Environmental Report. Other potential considerations are:

- Important sites for Limerick's Flora, including Flora Protection Order (FPO) sites. There are many areas in and around Limerick City, which contain species such as the Triangular Club rush, which is located along the River Shannon and some of its tributaries, particularly around the city.

- Other sites of high biodiversity value or ecological importance, e.g. Bird Watch Ireland's Important Bird Areas' (Crowe et al., 2009). In Limerick City, Westfields and Coonagh would be important sites.



Figure 3 – Summer Snowflake (*Leucojum aestivum*) photographed beside the Abbey River in Limerick City. This plant has been described as being native only in Limerick, Clare and Wexford

In 2012, Limerick City Council prepared a Biodiversity Plan for Limerick City, the overall aim of which was promote biodiversity and a number of objectives for the city, highlighting what we can do to help maintain biodiversity for future generations, identify where we can find key habitats containing biodiversity within Limerick City. The Biodiversity Plan is a useful tool in measuring the extent of habitat that existed and measure the impact of development in the intervening period, the information contained in the Plan will be useful in carrying out environmental assessments and informing the content of the proposed Development Plan policy.

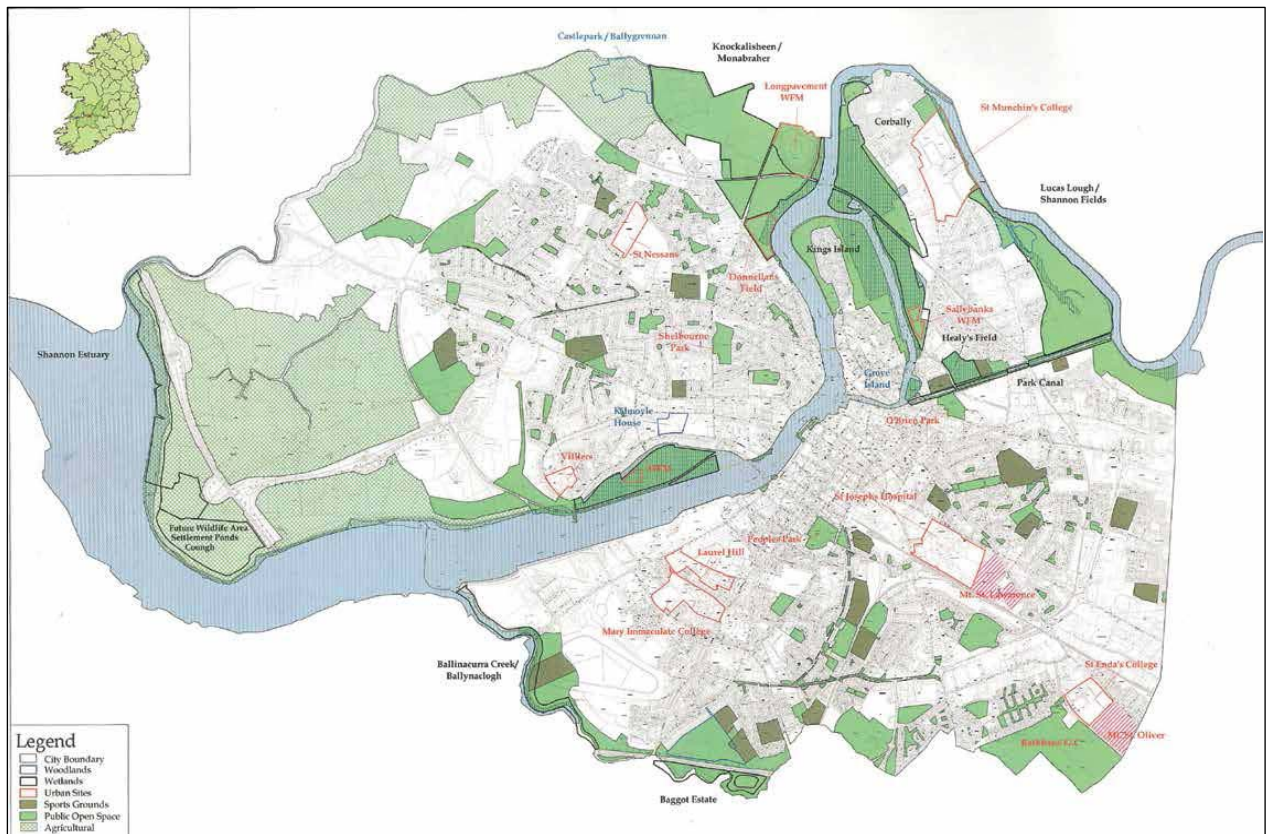


Figure 4 – Limerick City Biodiversity Plan (2012), Map shows habitat and open space areas in Limerick City

4.0 – Cultural Heritage

4.1 – Archaeological Heritage

Archaeological heritage is protected under various legislation including the National Monuments Acts (1930 – 2004), Natural Cultural Institutions Act 1997 and the Planning and Development Act 2000 (as amended). The coming together of the city and county means that a huge range of monuments from Kings John's Castle to ring forts will require an appropriate policy response. The estuary too provides its own range of archaeological features to consider, both within Limerick City and downstream. Riparian and instream archaeology are important elements, which shall also be considered and have significant historical value.

It is worth giving specific mention to Lough Gur and the range of archaeological monuments and their settings that exist in that area. Given the unique setting and the nature of the archaeological character, it is worthy of its own landscape character area, defined by the area of archaeological and visual sensitivity that surrounds the lake. This Landscape Character Area and its zone of special development control provide the basis of Limerick's efforts to manage a sensitive area on a larger scale.



Figure 5 – King Johns Castle and the nearby Thomond Bridge, both important components of Limerick’s urban heritage **Source: Shannon Heritage**

4.2 – Architectural Heritage

The Limerick City Development Plan 2010 – 2016 (as extended) contains 435 protected structures. These are effectively a history of development in the City, with varying structures being dwellings, parts of transport infrastructure, such as canal locks and bridges and parts of Limerick’s industrial past. In an urban environment, in particular, they add local character and in areas, where Architectural Conservation Area (ACA) designations are in place they can define the local character. Limerick City is notable for having six Architectural Conservation Areas, which play an important part in preserving the historical areas of the city. Dereliction and abandonment are cited as being one of the main threats to the buildings and structures within ACAs in Limerick, followed by insensitive development. ACAs also play a part in the conservation of architectural heritage in County Limerick with ACAs present in Newcastle West and in Kilmallock, where the designation plays an important role in the conservation of the built heritage of both towns. They are also present in many of the other towns and villages of Limerick including Abbeyfeale, Askeaton, Bruff, Cappamore, Glin, Hospital and Rathkeale. There are approximately 1,500 Protected Structures currently identified in the Limerick County Development Plan 2010 – 2016 (as extended), scattered throughout the county, many located in towns and villages across Limerick.

The Record of Protected Structures included in the current City and County Development Plans is legislated for under Section 12 and Section 51 of the Planning and Development Act 2000 (as amended). Protected Structures are defined as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. This plan will be the first to combine the

architectural heritage of both Limerick City and County. The city is characterised by its extensive Georgian streetscapes, which are protected by Architectural Conservation Area designations. An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and can sometimes contain a number of protected structures. The new Development Plan will consider the implications of this and will update the policies for the architectural heritage of the city and county as a whole.

4.3 – Landscape

The landscape of County Limerick has been classified into ten different landscape types, following the completion of a Landscape Character Assessment process for the 2005 Limerick County Development Plan and was also included in the 2010 Limerick County Development Plan. These are as follows:

- Agricultural Lowlands;
- Ballyhoura Slieve Reagh;
- Galtee Uplands;
- Knockfierna Hill;
- Lough Gur;
- Shannon Integrated Coastal Management Zone;
- Southern Uplands;
- Tory Hill;
- Slieve Felim Uplands;
- Western Hills/Barnagh Gap/Sugar Hill;

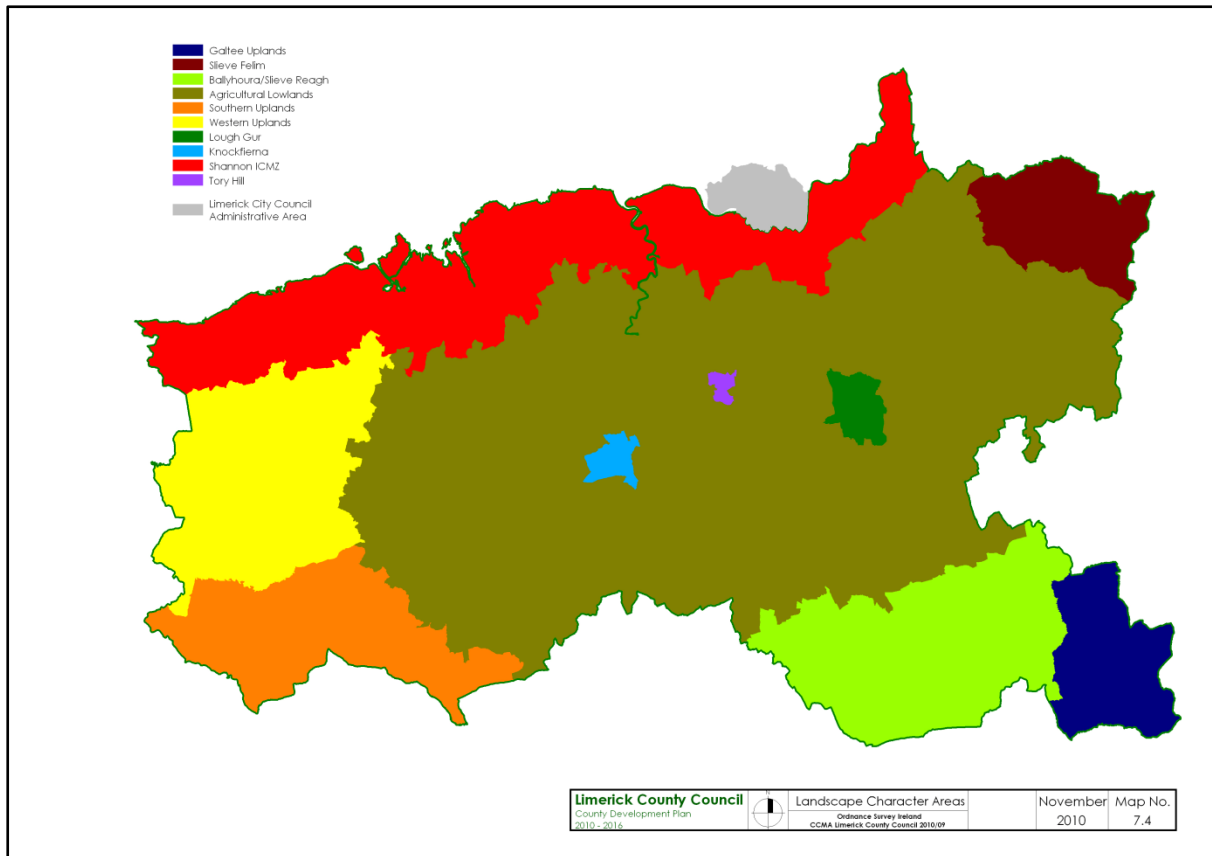


Figure 6 – Landscape Character Areas identified in Limerick County Development Plan 2010 – 2016 (as extended)

While the Landscape Character Areas have been long established in Limerick, the National Landscape Strategy for Ireland (2015 – 2025) seeks to develop a National Landscape Character Assessment. This may well have implications for the current Limerick landscape characterisation and any outcomes from the National Landscape Strategy will be reviewed and incorporated into the plan where this is deemed necessary. Careful consideration of the urban landscape of Limerick will also take place, as part of the review of the development plan.

Limerick City has a unique and distinctive landscape that forms a key aspect of the City’s character. As with the county, the River Shannon provides a backdrop to the much of the city area and forms an essential part of the character and attraction of the city. The presence of the city docks is also a feature to be considered. The city is steeped in history and the historic element of the city such as King Johns Castle and the Georgian areas provide unique aspects of the city character. There are overlaps between landscape and architectural heritage. The current Limerick City Development Plan puts it well “within cities, such as Limerick, landscape character involves the combination and interplay of many elements, including: the landscape; built environment; riverscape and natural heritage.



Figure 7 – The extent of the Shannon Estuary. This picture was taken from a small boat looking towards Aughinish Alumina from the Clare side in 2016

Landscape is largely a non-renewable resource and therefore it is in the City's interest to ensure that the City's landscape assets that remain are protected for future generations for their visual, functional, natural heritage and other values. Many of Limerick's landscape assets, and particularly those that have an open 'greenfield' character, have been lost over a period of time. Given the diminishing supply of non-renewable landscape assets the City Council has sought to review the existing landscape policy and to provide a clear policy basis for protecting those remaining assets.



Figure 8 – Looking north and eastwards towards Thomond Bridge, the Eel weir at Thomondgate and the Railway Bridge beyond, there is little doubt about the influence of the Shannon on Limerick’s urban landscape. Source: irishnet.de.

The current Limerick City Development Plan clearly recognises the significance of watercourses in the city saying “rivers and water ways are very important assets of Limerick and play an important role in the layout and structure of the city and are an integral element of the city’s landscape character” (Limerick City Development Plan 2010 – 2016 as extended).

4.4 – Climate Change and Heritage

The direct effects of climate change on heritage may be immediate or cumulative. Damage from catastrophic weather events such as floods and storms is likely to increase at the same time as slow onset environmental-deterioration from a changing environment. The way these effects manifest will vary, according to the sensitivity of the site its level of exposure. Coastal and Estuarine sites would be particularly vulnerable. There will also be indirect impacts arising from societal responses to climate change in terms of both adaptation (e.g. changes in land use, such as construction of flood defences or use of land as flood residence areas) and mitigation (e.g. the retrofitting of historic buildings to reduce energy consumption). Of the many potential impacts, those identified as priorities for heritage adaptation planning are flooding (inland and coastal), storm damage, coastal erosion, soil movement (landslip or erosion), pests and mould, wildfires and mal-adaptation. This might

include unsuitable adaptations to historic buildings for instance or modifications to wetland habitats which might affect their ecological functions.



Figure 9 – Interior of the ruined Church in Churchtown graveyard in rural County Limerick.

This picture shows both the fragility of our archaeological heritage and as a graveyard its continued importance for local communities

It is considered that in the environment and heritage chapter the inclusion of policy content relating to climate actions and the built and archaeological and natural heritage would be the best approach in that it draws attention to the issue and places climate responses for archaeology and built heritage on an updated policy footing. The policy content will also stress the need to avoid rushed actions which would damage aspects of our heritage.

Irish biodiversity is vulnerable to the impacts of climate change, but also has a key role to play in establishing an adaptive capacity and mitigation response. The declaration of a climate change and biodiversity emergency by Dáil Éireann in May 2019 recognizes the importance of combined action on both of these crises. The Citizens Assembly on climate change, the report for the Joint Oireachtas Committee on Climate Action and the government's Climate Action Plan seek to address the emergency and increase Ireland's ability to respond with appropriate climate action. Climate change has major indirect impacts on Irish biodiversity through its interaction with other pressures, in particular habitat fragmentation and loss; over-exploitation; pollution of air, water and soil; and the spread of invasive species. This Biodiversity Sectoral Climate Change Adaptation Plan considers terrestrial, freshwater and marine biodiversity and ecosystem systems. The purpose of the Bio-diversity Climate Adaption Strategy is to identify adaptation options that will help to protect biodiversity and ecosystems from the impacts of changing climate and to enable ecosystems to play their role in increasing resilience to climate change.

Priority actions have been identified in the Biodiversity Climate Change Sectoral Adaptation Plan and are an important guide for planning policy. Some of those relevant to planning are shown below with a comment following:

- Restore and enhance natural systems through management to increase resilience - this is very similar to actions from the Limerick Climate Change Adaptation Strategy. Such actions would require considerable ecological assessment prior to implementation particularly if they were close to or part of a network of designated sites or other important habitats. In this situation it would be important to avoid actions that in the long term would damage the ecological functions of these natural systems. The development plan could play a role here through zoning for example.
- Develop and implement a National Soil Strategy to increase the resilience of soils - in this regard it is worth noting the NPF and RSES emphasis on concentrated development, and the reuse of brown field sites, which would help minimise development of green field sites, thereby minimising soil disturbance.
- Develop an integrated coastal management strategy which includes ecosystem based adaptation actions, a good basis for this lies in the Shannon Integrated Framework Plan. The Marine Spatial Planning Bill with emphasis on sustainable development of the coastal areas will also have implications in this area and indeed stresses the importance of an ecologically based development pattern.
- Promote ecosystem restoration and conservation investment in actions that increase carbon sinks while promoting biodiversity - the policy content in the current County Development Plan, in relation to peat-land sites could be further developed to take this into account. This would have a valuable mitigation role to play as well.
- Develop an impact assessment tool to screen for potential maladaptation impacts - the current Strategic Environmental Assessment/Appropriate Assessment system could be adapted for this purpose.
- Design corridors and buffer zones to enhance the resilience of protected areas and designated sites by increasing opportunities for dispersal across the landscape; this is possible within zoned areas, but more problematical in the wider countryside, to which the zoning mechanism does not extend. However an initial step towards this would be policy content outlining the importance of river corridors for animal and plant distribution throughout the river system. Certainly policy support for buffer zones and corridors could be further developed in the new plan.
- Implement measures to reduce the barrier effects of roads, railways and technical objects in rivers and streams to facilitate species spatial responses to climate change - general policies and guidance could be included in the infrastructure chapter to highlight this issue and suggest means of dealing with it. This would help with assisting the movement of species such as otters (*Lutra lutra*) following infrastructure projects. In broader terms the movement of species in response to climate change should be facilitated by suitable construction of infrastructure which would have adequate passage mechanisms and permeability to allow the movement of plants and animals on a landscape scale.
- Green Infrastructure: Green infrastructure is the network of green spaces and natural elements that lie between and connect our cities, towns and villages. It is made up of open spaces, waterways, gardens, woodlands, green corridors, wildlife habitats, street trees, natural heritage and open countryside. Green infrastructure

can provides multiple benefits for the economy, the environment and people. The concept of multifunctional areas of land is a key feature of green infrastructure. Individual parcels of green space may have many functions, such as:

- Providing recreational space for healthy exercise, play and outdoor relaxation
- Providing wildlife habitats;
- Contributing an attractive natural element to an area;
- Improving local environmental quality in people's everyday living and working environments;
- Providing flood storage space and riparian habitats;
- Helping areas to cope with the impacts of climate change;
- Providing areas for local food production - in allotments, gardens and through agriculture;
- Helping to foster environmental awareness within the community.

The acknowledgment of the importance of green infrastructure should be accompanied by recognition of the fact that it should be carefully managed and that ecological needs should take precedence over public access and amenity. It is often the case that amenity uses and needs are different and from those of green infrastructure and ecological processes and this should be recognised in the plan. In some situations public access may be possible but this aspect of green infrastructure should be carefully assessed in order to minimise the possible effects of public access and associated infrastructure, such as paths, that are needed to support it.

5.0 – Water Quality

The Water Framework Directive (WFD) requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving good status. The Water Framework Directive, Directive 2000/60/EC, was adopted in 2000, as a single piece of legislation, which aims to prevent further deterioration of and to protect, enhance and restore the status of all bodies of water with the aim of achieving at least good ecological status by 2015, or at the latest by 2017. All public bodies are required to coordinate their policies and operations to maintain the good status of water bodies, which are currently unpolluted and improve polluted water bodies to good status. It requires the preparation of plans at catchment level to achieve these aims.

The Environmental Protection Agency Water Quality in Ireland Report 2015 – 2018 evaluates the water quality or ecological health of Ireland's surface waters, (rivers, lakes, canals), ground waters, estuaries, and coastal waters, against the standards and objectives set out in the EU Water Framework Directive and the National River Basin Management Plan. Nationally Ireland's river water quality declined by 5.5%, only 53% of river water bodies are now at good or high ecological status and in County Limerick only 47% of river water bodies are at a satisfactory level.

Limerick depends heavily on ground water for much of its drinking water sources. Many water supply schemes either public or private rely on wells to source their supplies. In Limerick, ground water in the north of the county is in a poor ecological state. This is due, in part, to geology, the bedrock in much of this area is limestone and soils are shallow, which

allows for the ingress of pollutants. Since ground water can account for much of the base flow of rivers, during summer months, these pollutants are also an issue in Limerick's surface watercourses.

In contrast, within Limerick City, the construction of the wastewater treatment plant at Bunlicky as part of the Limerick Main Drainage scheme has resulted in improvements in water quality with many untreated discharges to both the Shannon and Abbey Rivers, being eliminated. It will be important to ensure that infrastructural capacity keeps pace with future development, to ensure adequate capacity exists in the networks.

The proposed Limerick Development Plan 2022 – 2028 will need to consider a number of issues, in relation to further protection of water quality, a sample of measures include: using buffer areas around water courses can help, as can the continued implementation of Ground Water Protection plans in rural areas. The use of buffer zones for sensitive watercourses has implications for flooding of course and this will be reflected in the section which follows.

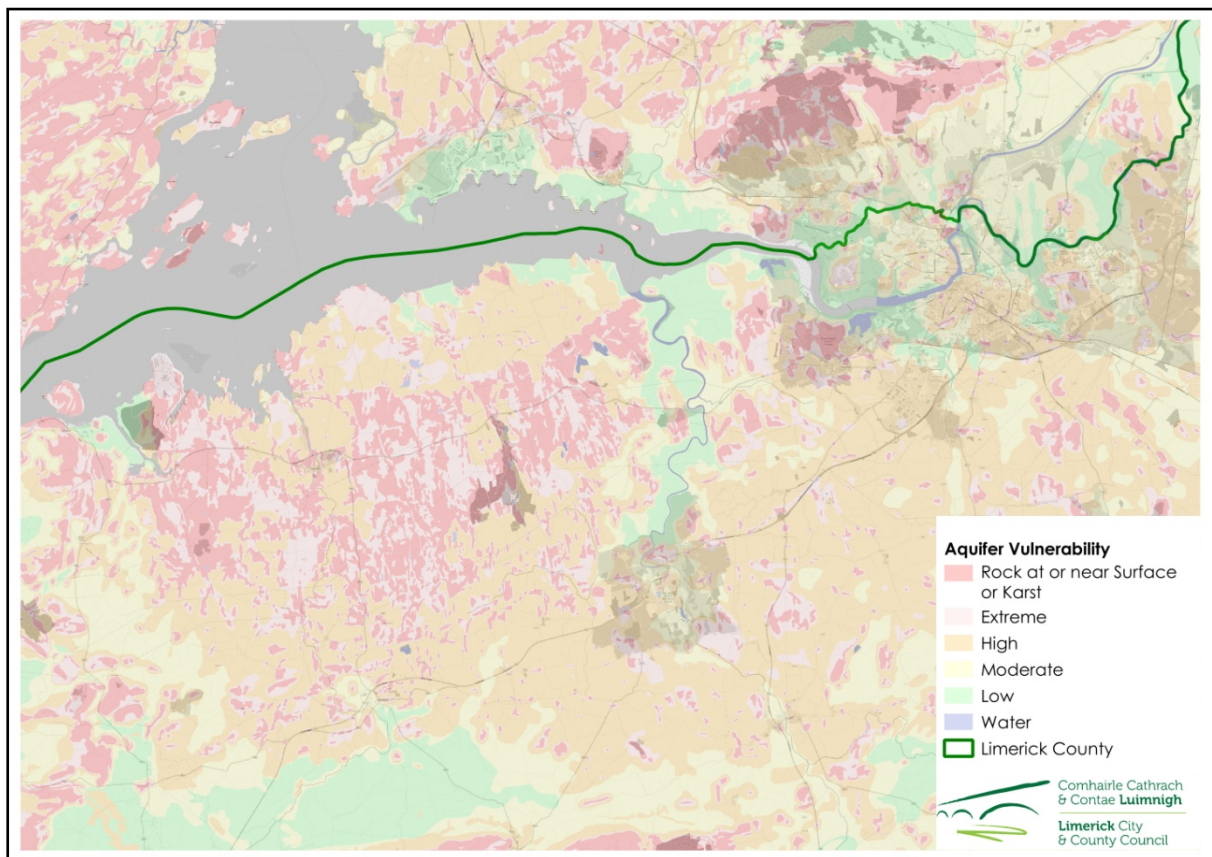


Figure 10 – Aquifer Vulnerability Limerick City and Environs and North County Limerick

The question of water quality is also closely connected to that of human health and of human usage of the assimilative capacity of watercourses for treated discharges from wastewater treatment plants. Many of the settlements in County Limerick are constrained by the lack adequate treatment facilities. This is a major issue for land use planning and extensive consultation will take place with Irish Water throughout the Development Plans review process. It is important to ensure that potential developers should liaise with Irish

Water, in order to determine the spare capacity of any plant to which they might need to connect.

With the emphasis on development within urban areas and compact development, in both the NPF and the RSES, this will pose a huge resource challenge for the Local Authority, in ensuring that treatment infrastructure is able to keep pace, with what could well be increased demand for these services in Limerick's towns and villages.

Climate change may also have implications for water supply. The prolonged dry period in the summer of 2018, lead to water shortages in the south east of the County, which lead to water being transported into the area. This lasted until the autumn of 2018, as aquifer recharge was slow following the drought conditions, which prevailed during the summer months.

6.0 – Air and Noise Factors

Air quality monitoring nationally is divided into four zones. Dublin (Zone A), Cork Urban Area (Zone B) and specified population centres with a population over 15,000. (Zone C). Non-urban areas are in Zone D. The EPA publication indicates that Air Quality in Ireland (2018, p.4), states that pollutant levels "were below EU legislative limits". This does not mean that localised problems would not arise. Typically, it is emissions from transport on heavily used routes such as national primary routes can that can cause a build-up of pollutants. They can also cause noise emissions, which, particularly when such routes move through or close to urbanised areas, can affect the local population.

Noise is addressed in the *Regional Spatial and Economic Strategy for the Southern Region* and mirrors the *National Planning Framework*. It highlights that the World Health Organisation has identified that noise is the second major environmental issue in Europe causing health problems after air quality. The Strategy outlines that there should be the proactive management of noise, where it is likely to have a significant adverse impact on health and the environment and it supports and the statutory requirement of Local Authorities under the Environmental Noise Regulations, 2006 (as amended), in the preparation of strategic noise maps and noise action plans.

It is often during specific phases of the land development process such as the construction phase of development sites that emissions of noise and dust emissions, become an issue. It is also the case that traffic on an ongoing basis can cause significant noise emissions which are often above healthy levels. The new plan will have to update its policy content for all of these issues. Policy in relation to the use and installation of artificial lighting will also have to be re-examined.

7.0 – Conclusion

Limerick has a rich and varied heritage, both urban and rural comprised of built cultural and natural features. As outlined above, many new challenges face us in updating the relevant policy content of the development plan, one being the fact that it is the first plan to take into account both City and County, the fact that there has been significant change in relation to heritage and environmental issues, their influence and the outcomes. Perhaps the most pertinent issues facing the future of Limerick City and County is the need to respond to climate change and to ensure that our policies will be of sufficient quality to guide land use planning in such a fashion as to ensure that our heritage and environment will be able to respond to future challenges within the plan period.