

Chapter 12 Environment Management & Infrastructure

Part I Environment

Introduction

The purpose of this chapter is to outline Limerick City Council's policies and objectives for achieving high quality, sustainable environmental standards and to provide high quality public infrastructure in the City. The City Council seeks to maintain and enhance the quality of the City's environment and eliminate potential environmental risks, while also facilitating sustainable economic and physical development. The protection of the natural and built environment is of major importance to the future social and economic development of the City, as is the delivery of essential infrastructure and services.

Policy EM.1

It is the policy of Limerick City Council to void or reduce, where relevant, the negative environmental impacts of development in the City.

Surface Water Quality

Water quality in the River Shannon has improved significantly with the works undertaken as part of the Limerick Main Drainage Scheme. The completion of the Scheme has had a major influence on improving the water quality and appearance of the river in both the city and the upper and lower reaches of the river outside the city boundaries creating greater opportunities for developing the river from an amenity point of view for tourism, riverside walks and boardwalks and generally for water frontage development and living.

The Water Framework Directive (WFD) requires that all member states implement the necessary measures to prevent deterioration of the status of all waters i.e. surface, ground, estuarine and coastal, and contains measures to protect, enhance and restore all waters with the aim of achieving good status by 2015. All public bodies, including Limerick City Council, are required to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted; and improve polluted water bodies to good status by 2015.

For the purpose of implementing the WFD, Ireland has established a system of integrated river basin management. Limerick City is located in the Shannon International River Basin District which is the largest in Ireland at more than 18,000 km² in area.

The system will include provision & implementation of:

- A comprehensive water quality monitoring system for all waters within the river basin district;
- A computerized management system;
- A programme of appropriate abatement measures;
- A public awareness and consultation programme;
- An environmental management system.

Policy EM.2

It is the policy of Limerick City Council to assist in the preparation and joint implementation of the Shannon River Basin Management Strategy in order to promote and achieve an improvement of both surface and ground water quality.

Policy EM.3

It is the policy of Limerick City Council to continue to improve systems of monitoring and surveying water quality in the Shannon River and other City Streams in conjunction with Limerick County Council.

Waste Management & Recycling

Limerick City Council is part of a Waste Management Region along with Limerick, Clare and Kerry County Councils. The City's policies on managing waste are set down in the *Regional Replacement Waste Management Plan 2006-2011*.

The overall approach of the Limerick, Clare, Kerry Waste Management Plan follows the Irish & European Waste Hierarchy of:

- Prevention
- Materials Recovery (recycling/recovery)
- Energy Recovery
- Safe Disposal including landfill

Prevention

To prevent the generation of waste a fundamental behavioral change in waste management practices is required by the householder, business, industry etc. In the *Replacement Regional Waste Management Plan 2006-11*, one of the key aims is to prioritise waste prevention across all sectors.

Reuse

Limerick City Council actively supports reuse web sites and has links on the website to local and national reuse sites. The Regional Waste Management Office will be participating in the roll out of a national reuse website in 2009 on behalf of its partners.

Materials Recovery

The dry recyclable bin or opti-bag collection service provides householders with a readily accessible outlet to maximise the recovery of dry recyclable materials. This service is available to all householders in the City. The target in the current waste management plan for recyclables is 45%.

Energy Recovery

There is no existing thermal treatment and energy recovery in the Limerick, Clare, Kerry Waste Management Region. The current target in the regional waste management plan for the thermal treatment is 41% of waste to be treated by thermal treatment. This target assumes that the infrastructure is in place.

Landfill

Limerick City Council does not operate a working landfill. Municipal waste in the City is collected by private collectors with waste collection permits and brought to landfills in other parts of the region or country. The most recent 2007 annual report on the plan indicates that 77 % of the City's municipal waste was land filled in 2007. The current target under the regional waste management plan for the landfilling of municipal waste is 14%. This target assumes that the infrastructure is in place for thermal treatment, materials recycling and biological treatment.

In line with National Policy the following targets are set down in the plan for 2013:

- Recycling 41%
- Thermal Treatment 45% (depending on the infrastructure being available)
- Landfill 14% by 2013

Policy EM.4

It is the policy of Limerick City Council to implement the provisions of the 'Regional Replacement Waste Management Plan for Limerick/Clare/Kerry Region 2006-2011', which includes:

- *Implement European Policy on Waste including the Waste Management Hierarchy*
- *Implement National Policy on Waste*
- *Achieve Targets set out in the EU landfill directive*
- *Implement Targets set out in the National Biodegradable Waste Strategy*
- *Polluter pays principal.*

Policy EM.5

It is the policy of Limerick City Council to continue working with the local community to raise awareness on best practice in-relation to waste management in Limerick City.

Longpavement Landfill Site

The Longpavement landfill site is located adjacent to Moyross. The facility opened in 1957 and closed in 1998. Limerick City Council is committed to restoring the Longpavement Landfill site under EPA Waste Licence W0076-1.

Policy EM.6

It is the policy of Limerick City Council to restore the Longpavement landfill site into a positive landscape feature that provides a recreational, amenity and biodiversity resource for the community within the city boundary.

Municipal Waste Management & Recycling

Limerick City Council continues to promote an increase in the amount of waste reused and recycled consistent with the Waste Management Plan for the City and Waste Hierarchy. The waste collection service in Limerick City is provided by private waste collection companies. These waste collection companies are regulated by the City Council via Waste Collection Permits which are issued on a regional basis. All households in Limerick City have a segregated waste collection service available to them. Householders separate domestic waste at source into a dry recyclable fraction and a residual waste fraction.

In accordance with the National Biodegradable Waste Strategy an additional opportunity to segregate the organic fraction from the waste stream is being introduced to both commercial and household waste collections.

Recycling figures in the regional plan annual report June 07-08 indicate:

- household recycling rate of 23%
- commercial recycling rate of 65%.

The City Council also operates approximately 20 Bring Sites around the City. The target number of Bring Sites for the city in the Replacement Regional Waste Management Plan is 26 by 2011

Policy EM.7

It is the policy of Limerick City Council to protect existing bring sites in the city and to provide for the development of additional sites in accordance with the Replacement Waste Management Plan.

Policy EM.8

It is the policy of Limerick City Council to identify and develop within the lifetime of the Plan a suitable site for a Civic Amenity Site within the City boundaries.

Construction & Demolition Waste

National Policy ('Changing Our Ways') on Construction and Demolition Waste (C&D) has set an overall target of 85% recycling by 2013. Over the life time of the Replacement Regional Waste Management Plan, Limerick City (in conjunction with other local authorities in the region) must progress towards this overall objective through the implementation of the waste hierarchy and producer responsibility.

Policy EM.9

It is the policy of Limerick City Council to reduce the generation of Construction & Demolition Waste and ensure that reuse and recycling of this waste is maximized in support of the implementation Plan for the Management of C&D in the Region.

New building design and layout is crucial to effective waste management particularly at the operational phase of a development. Specific provisions must be made for segregated space appropriate to the size of the building that will allow for the segregation of waste consistent with the type of development in question and in line with national and regional policy, law and regulations.

These issues should be addressed at the planning stage of any development. Generally these would include:

- To ensure the provision of adequate space for wheelie bins in all new residential schemes;
- To ensure that communal refuse storage areas/bin enclosures are easily accessible to residents and are sited sensitively;
- To ensure developers provide home composters to all new houses with gardens;
- To ensure that appropriate design requirements for the facilitation of waste sorting and collection services for all significant development proposals are provided;
- To ensure that separate storage facilities for recyclable waste for all applications to extend and/or improve existing retail centres.

Policy EM.10

It is the policy of Limerick City Council to require Applicant/Developer at the planning stage to address the issue of waste management for both the construction phase of the development and the operational phases.

Litter Management

The impact of litter is recognised by the City Council as being detrimental to tourism and other economic sectors and damaging to the aesthetic quality of the City's environment. Limerick City Council is taking a proactive approach to combat the problem of litter using the management and enforcement powers under the Litter Pollution Act 1997. Cleansing programmes for the City's streets have been expanded and streamlined. Increased numbers of litter wardens have been employed and the number of on the spot fines and prosecutions for litter violations has increased dramatically over the past couple of years. Public education and awareness initiatives have also been introduced. The City Council has adopted a Litter Management Plan which will continue to be implemented over the period of the Development Plan.

Policy EM.11

It is the policy of Limerick City Council to implement the Litter Management Plan.

Contaminated Lands / SEVESO Sites

Contaminated land is generally considered to be lands where there are substances which could cause significant harm and endanger human health. Examples of land uses that may have caused such contamination include gas works, landfill sites ~~and scrap yards~~ [etc.](#)

The Docklands area of Limerick City, given its industrial use since the turn of the century and to the present day, has a legacy of contaminants in the soil and groundwater. Any redevelopment of former industrial sites within this area must consider potential environmental impacts arising from past activities.

Applications for development on contaminated lands will generally be encouraged, the City Council will require that a detailed investigation is carried out and appropriate mitigation strategies can be implemented to ensure that the land is treated/remedied appropriately before any development may take place.

The E.U Directive (96/82 EC) on the control of major accident hazards, commonly referred to as the Seveso II Directive was adopted on the 3rd February 1999. It was introduced into Irish Law through statutory instrument i.e. the EC (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000 (S.I. No. 476 of 2000), on the 21st December, 2000. The Directive aims to prevent major accident hazards involving dangerous substances and chemicals and the limitation of their consequences for people and the environment.

These objectives must be pursued through controls on the following:

- The siting of new establishments.
- Modifications to existing establishments.
- Development in the vicinity of an establishment which, by virtue of its type or siting, is likely to increase the risk or consequences of a major accident.

Within Limerick City there are two identified Seveso Sites, known as 'lower tier' sites under the European Communities (Control of Major Accidents Involving Dangerous Substances) Regulations 2006 (S.I 74 of 2006).

These are:

- Joint Fuel Terminal (Topaz), Courtbrack Avenue, Dock Road.
- Grassland Fertilizers, Dock Road.

The Health & Safety Authority provides such advice where appropriate in respect of planning applications within a certain distance of the perimeter of these sites. Seveso Site Consultation Distances are specified in the Planning & Development Regulations, 2001 (SI No 600 of 2001) and varies depending on the nature of activity at the site. Such technical advice will be taken into account in the consideration of applications for planning permission.

Policy EM.12

It is the policy of Limerick City Council in relation to proposals for developments on land identified as a known Seveso Site to consult with the Health & Safety Authority (HAS) when assessing proposals for development.

Information & Communications Technology (ICT)

Telecommunication infrastructure is a fundamental requirement for the successful development of Limerick as a Gateway City. The availability of various telecommunications services such as broadband is an essential and beneficial element in the life of the local community and the national economy. They contribute to quality of life in two ways: firstly, access to fast, reliable and cost effective communications can increase social inclusion, economic competitiveness and employment opportunities; and secondly, modern technologies can also contribute to sustainable goals by reducing the need to travel, by home working, tele-conferencing, distance learning and e-commerce for example.

The advantages of a high quality telecommunications network must however be balanced against the need to safeguard the urban environment of Limerick City, particularly in sensitive areas where the impacts on residential amenity and visual amenity of areas needs to be adequately assessed. Visual impact must be kept to a minimum with detailed consideration given to the siting and external appearance of masts and antennas particularly in areas of landscape sensitivity (see protected areas *Chapter 11 Landscape, Biodiversity & Recreation*). Detailed policies on the siting and location of telecommunications masts are outlined *Chapter 15 Land Use Zoning Objectives & Chapter 16 Development Management*.

Policy EM.13

It is the policy of Limerick City Council to promote and facilitate the provision of appropriate information and telecommunications infrastructure (including broadband services) within the City and to encourage the provision of telecommunications based services at appropriate locations subject to environmental considerations in accordance with the Telecommunications Antennae and Support Structures Guidelines for Planning Authorities, 1996.

Energy Efficiency & Renewable Energy Measures

Climate change is now recognised as the most significant and threatening global environmental problem. In response to this, the Kyoto Protocol has imposed targets on Ireland's greenhouse gas emissions (GHG). Ireland's international commitment is to limit greenhouse gas emissions to a 13% increase above the 1990 level by 2012. As of 2005, Ireland's GHG emissions increased by 25.4% above 1990 levels indicating the extent of the challenge ahead.

Ireland's rapid economic growth over the same period has resulted in a corresponding increase in energy consumption and therefore greenhouse gases emissions through the upsurge in building throughout the country. Energy use in buildings accounts for approximately 45% of Ireland's delivered energy consumption and over one third of the country's carbon dioxide emissions.

The most significant and sustained increase in GHG emissions of 160% has been in the transport sector, mainly due to road transport through the unprecedented growth in car ownership over the last 10-15 years. The City Council is committed to facilitating and encouraging more sustainable transport options in the city and will actively engage with key transport stakeholders to help deliver an enhanced and efficient public transport system for the city. Added to this, the City Council will work with adjacent Local Authorities to provide a network of Green Transportation Routes for the urban area and will seek to identify potential *Park & Ride* facilities on all of the main approach roads into the City. Transport options and policies are detailed in *Chapter 5 Transportation* of the Plan.

Government Energy Policy now recognises the role that energy saving and renewable energy technologies will need to play in reducing emissions of greenhouse gases and Ireland's dependence upon fossil fuels. If such emissions are to be reduced progressively to meet rising

target levels, it is crucial that new buildings meet more stringent energy standards as soon as possible.

The recently published Government White Paper entitled '*Delivering a Sustainable Energy Future for Ireland 2007-2020*' sets a target for a 20% reduction in energy usage across the whole economy by 2020. The Public Sector will require a 33% reduction in energy usage. In addition, the Government is committed to providing 15% of electricity consumed from renewable sources by 2010 and 33% by 2020. The scale of the task ahead is highlighted by the fact that between 1990 and 2005 final energy demand increased by 64%. This target was increased to 40% by the Government in its 2008 '*Strategy Building Ireland's Smart Economy*'.

The '*National Climate Change Strategy 2007-2012*' provides a framework for the achievement of the reduction of Greenhouse Gas Emission (GHGs) in achieving Ireland's obligations under the Kyoto protocol. Some of the important strategies include a modal shift to public transport as a result of improved spatial and energy planning. There is now a requirement for all new buildings to become more energy efficient in line with the EU Energy Performance of Buildings Directive 2002/91/EC and through the development of energy related programmes and awareness campaigns targeted at all building users, both new and existing.

The Government is reviewing the current Building Regulations (Technical Guidance Document L - Conservation of fuel and energy) which is due to be completed in 2008. The Building Regulations (Part L) are the main influence on standards of energy performance and carbon dioxide emissions. The Council intends using this statutory device to improve the overall energy efficiency and renewable energy take up of new buildings in the City.

Dwelling Energy Assessment Procedure (DEAP) is the official Irish procedure for calculating and assessing the energy performance of dwellings. Published by Sustainable Energy Ireland (SEI), the procedure takes account of the energy required for space heating, ventilation, water heating and lighting, less savings from energy generation technologies. It calculates both the CO₂ emission rate and energy consumption per annum. This is a useful tool for designers when considering and comparing options to conserve energy and reduce CO₂ emission.

DEAP is used to calculate the Building Energy Rating (BER) of a dwelling. The BER is a label containing the energy performance of the dwelling. Expressed as primary energy use per unit floor area per year (kWh/m²/per annum) and illustrated as an Energy Rating (A1, A2, A3, B1, B2, B3, etc) for the dwelling, it also includes a Carbon Dioxide (CO₂) Emissions Indicator (kgCO₂/m²/yr) associated with this energy use and an advisory report. As per the Building Regulations all buildings will in time be required to be energy.

As of now the roll out of this requirement applies as follows:

- To all new dwellings commencing on or after 1st January 2007
- To all new buildings other than dwellings commencing on or after 1st July 2008
- To all existing buildings when let or sold on or after 1st January 2009

Limerick City Council Climate Change Strategy

The Limerick City Council is presently preparing a *Draft Climate Change Strategy* which outlines the City Council's commitment, as a priority, to encourage more sustainable development, the efficient use of energy and the use of renewable energy in new and refurbishment buildings throughout the city. Included in this Strategy are the objectives to improve the thermal comfort of all Council owned buildings and reduce operating costs in the future as retrofitting of buildings to improve their energy performance at a later date will be

much more expensive. As part of this commitment the City Council will encourage developers to liaise with the Environment Department of Limerick City Council to discuss development proposals at pre planning stage so that the best design and layout for particular energy efficient systems can be considered from the outset.

Policy EM.14

It is the policy of Limerick City Council to support the development and use of renewable energy within the City.

Policy EM.15

It is the policy of Limerick City Council to adopt and implement the policy framework as set out in the Climate Change Strategy within the lifetime of this Development Plan.

Policy EM.16

It is the policy of Limerick City Council to encourage the use of energy saving measures and sustainable/renewable energy technologies in new developments where appropriate. Limerick City Council will promote and encourage the development of 'low energy buildings' as standard throughout the City.

In addition to full compliance with the *Building Regulations 1997-2007 TGD Part L*. Limerick City Council will require a minimum energy rating of B1 (Less than 100kWh/m²/yr) for all new dwellings (whether single use or part of a mixed use scheme) and encourage the attainment of higher standards where possible (A3, A2, A1 etc.). The current nationally approved energy rating methodology and software should be used to certify new developments. In the case of planning applications for residential schemes above 10 units an Energy Statement shall be submitted by a qualified and accredited person certifying that the proposed development conforms with, or improves upon, the above targets. Non residential development is obliged to conform at a minimum to the current and future building regulations and future Building Energy Rating requirements as required.

Policy EM.17

It is the policy of Limerick City Council to encourage energy efficiency through the design of buildings, layout and orientation on site.

Promoting Public Awareness of Energy Efficiency

Information and public awareness campaigns are vital if sustainability targets are to be achieved. The City Council, in partnership with the Limerick City Energy Agency, will continue its efforts at increasing public awareness of energy best practice through Car Free Day, Energy Awareness Week, the Green Flag initiative for schools, and the continuation of environmental initiatives through the RAPID programmes etc.

Policy EM.18

It is the policy of Limerick City Council in partnership with other relevant agencies to increase public awareness of energy best practice.

Improving Energy Efficiency of Existing Local Authority Building Stock

The improvement of energy efficiency in the existing building stock through rehabilitation should be a key focus for sustainable building and housing strategies. The modernisation of existing housing stock is being progressed by a number of Government assisted schemes. These schemes target those most at risk from fuel poverty among those local authority tenants and the elderly most notably in the form of Sustainable Energy Ireland's Warmer Homes Scheme and the

Government aided Central Heating Scheme. The Regeneration programme will provide a mechanism of achieving this.

Policy EM.19

It is the policy of Limerick City Council to seek to improve the energy efficiency of its existing building stock.

Sustainability Checklist for New Developments

In considering proposals for development, the City Council will assess energy efficiency and waste management and take into account proposed site location, orientation, design, choice of materials, equipment and landscaping. The City Council is committed to the preparation of a sustainability checklist outlining best practice in achieving energy efficiency and sustainability in design and construction. The City Council will require developers to apply the principles identified in this checklist.

Conditions may be attached to planning permissions to ensure that sustainable building principles are applied. Developers of new buildings or buildings undergoing major refurbishment or change of use may be required to submit an energy statement demonstrating how their energy efficiency measures will work.

Policy EM.20

It is the policy of Limerick City Council to prepare a sustainability checklist outlining best practice in achieving energy efficiency and sustainability in design and construction during the lifetime of the Development Plan and to incorporate these into the development management system.

Promoting New & Innovative Schemes for Renewable Energy

The Government White Paper on '*Delivering a Sustainable Energy Future for Ireland*' sets very ambitious targets for expanding the role of renewable energy notably the target of 33% of electricity consumption to come from renewable resources by 2020. With regard to this, the City Council continues to pursue measures for renewable energy take-up and promotion.

The City Council will continue to promote research into, and use of, both geothermal heating systems and CHP systems along with alternative energy efficient and renewable energy technologies.

Policy EM.21

It is the policy of Limerick City Council to pursue initiatives which promote innovation in the fields of energy conservation and renewable energy resources and research.

Air Quality

The adoption of the EU Framework Directive on Air Quality Assessment & Management has fundamentally changed the entire approach to air quality monitoring and assessment in member states. The implementation of this Directive, which prescribes new and revised limit values for a wide range of air pollutants, has required a radical restructuring and expansion of monitoring networks in Ireland and other member states. Greater emphasis is placed on data dissemination and the need to keep the public informed on the state of air quality. New or extended monitoring networks have been established for the main traffic related pollutants. The information on these pollutants indicates that nitrogen oxides and particulate matter will present the greatest challenge in meeting the new EU standards in urban areas in the future with associated implications for traffic management and transport policy.

Air quality is monitored in Limerick City by a number of stations around the city measuring suspended particulates, sulphur dioxide, nitrogen oxides, ozone, carbon monoxide, sulphur dioxide, lead PM10 and benzene/toluene/xylene, etc. These stations ensure that Limerick City is compliant with the EPA recommendations outlined in 'The National Air Quality Monitoring Plan'. The information gathered through sampling is compiled in an annual report on air quality and trends produced by the City Council.

Policy EM.22

It is the policy of Limerick City Council to continue monitoring air quality and air quality trends and to expand the effectiveness and extent of monitoring arrangements in accordance with EU policy directives on air quality and to promote and develop the use of environmentally friendly fuels (such as bio fuels) in City Council vehicles and machinery.

Noise Pollution

Noise can have a significant impact on the environment and the quality of life enjoyed by individuals and communities. Traffic is the dominant noise source in most parts of the city. Other forms of noise, however, such as impulsive or tonal noise can potentially be more of a nuisance.

Local authorities, through the planning system, can help minimise the adverse effects of noise pollution by guiding development so that activities that generate noise are located away from noise sensitive areas such as housing estates and schools. Where this is not practicable, the City Council can place planning conditions on permissions for new development which seek to control and reduce noise levels. For example, conditions can be imposed restricting noise levels during construction, on entertainment activities and on industrial activity. Added to this the Council can further control noise pollution through the EPA Act 1992. Part VI Section 107 of the Act gives powers to the Local Authority to require measures to be taken to prevent or limit noise pollution. A new EU Directive on noise, 2002/49/EC, requires member states to draw up noise maps, local plans and long term strategies to control and reduce noise in future.

Limerick City Council has prepared a '*Draft Noise Action Plan*' under Article 11 of the Environmental Noise Regulations, 2006. The draft Noise Action Plan has been made for places near major roads.

Policy EM.23

It is the policy of Limerick City Council to require all major developments to be designed and operated in a manner that will ~~minimise and contain noise levels.~~ avoid significant noise impacts to sensitive receptors.

Policy EM.24

It is the policy of Limerick City Council to adopt a Noise Action Plan.

Light Pollution

While adequate lighting is essential to a safe and secure environment, light spillage from excessive or poorly designed lighting is increasingly recognised as a potential nuisance to surrounding properties, a threat to wildlife, and can reduce the visibility of the night sky. Urban and rural locations can suffer equally from this problem. Limerick City Council shall investigate and implement design of external light pollution reduction measures across all sectors especially with regards to public lighting. This will reduce the visual impact of our Cities on the night skies that is shown to have potential positive health and biodiversity impacts, while also potentially reducing long-term energy costs.

Policy EM.25

It is the policy of Limerick City Council to require that the design of external lighting/flood lighting (commercial and sports related) minimises the incidence of light spillage or pollution in to the surrounding environment and has due regard to the residential amenity of surrounding areas and road traffic safety.

Community Cemeteries

Policy EM.26

It is the policy of Limerick City Council to facilitate the acquisition of lands necessary for the expansion of community cemeteries.

Part II Water Services

Introduction

The purpose of this Chapter is to outline Limerick City Council's policies and objectives for achieving high quality, sustainable environmental standards and to provide high quality water & waste water infrastructure throughout the City. The protection of the natural and built environment is of major importance to the future social and economic development of the City as is the delivery of essential infrastructure and services. This Chapter is divided into key policy areas dealing with management measures and infrastructure developments relevant to the proper planning and sustainable development of the City as the Gateway of the Mid-Western Region.

Water Services Department Objective

To provide a safe and secure potable water source and a compliant waste water treatment plant to meet the needs of Limerick City, provide appropriate infrastructure to support this aim and in turn support the economic and social development of the City as a whole.

Policy WS.1 Potable Water

It is the policy of Limerick City Council to make continuously available a high quality drinking water source to meet local demands and to achieve an economically sustainable level of water production and supply through;

- *Water Production*
- *Water Quality*
- *Expansion & Improvements of the Water Distribution System*
- *Reducing Water Supply Demand through Water Conservation*

Water Production

The availability of a quality drinking water supply is essential for public health and the continued economic growth of the City and the Mid-Western Region as a whole. The need to balance the growing demand for water with the needs of the environment and those of existing users is critical. Future predicted population growth, increasing pressure for new development across the City and the changing trends in water use will lead to an increased demand for water. Thus, Limerick City Council shall seek to ensure prudent use of water resources while making adequate provision for future sustainable development. Over 60,000m³ per day of drinking water is currently produced by Limerick City Council at the Water Treatment Plant in Clareville. Of this production, 40,000m³ is delivered daily to the City whilst some 20,000m³ is exported daily to consumers in County Limerick and County Clare respectively. The source for raw water is the

River Shannon. The Water Treatment Plant at Clareville is currently undergoing an upgrade in order to meet present and future water demands in the City and the wider Mid-Western Region.

In addition to increasing capacity the plant is undergoing an upgrade in terms of:

- Rationalisation of works on the site to achieve a more efficient water production facility.
- Renewal of existing plant assets including storage, buildings and equipment in order to secure their future satisfactory operation, thereby ensuring good quality water at all times.
- Upgrading the control systems at the plant to facilitate a greater degree of automation, monitoring and control in order to improve efficiency and cost.
- Development of sustainable sludge treatment and disposal arrangements in order to secure satisfactory outlets for sludge residues at minimum cost.
- At the end of this upgrade, in April 2010, the plant will have a production capacity of 87MLD.

Objectives

- The Water Services Authority shall, not later than such date as may be prescribed by the Minister, make a '*Water Services Strategic Plan*' with regard to the provision of water services in its functional area.
- Complete a study assessing the necessity of completing Phase 2 of the proposed upgrade of the facility to 140 MLD.
- Complete a feasibility study on the potential to install a secondary source.
- Strictly monitor the O&M Phase (Operation & Maintenance) of the current contract to ensure the protection of the City Councils Assets.

Water Quality

Water abstracted from the River Shannon, is used as the primary drinking water source for the City's population. To comply with the EU Directive on the Quality of Drinking Water (98/83/EC), the City Council Laboratory monitors the water it extracts at three different stages:

- At abstraction
- During the treatment process
- And in the distribution system

The Environmental Protection Agency (EPA) assessed the results for 2008 and concluded that the quality of the water supply is above the National average. It also stated that compliance with microbiological parameters was excellent in Limerick City with none of the samples analysed detecting any E. coli or Enterococci.

Policy WS.2 Water Quality

It is the policy of Limerick City Council to comply with the requirements of the EU Directive on the Quality of Drinking Water (98/83/EC) through the monitoring of water at three different stages:

- *At abstraction*
- *During the treatment process*
- *And in the distribution system.*

Objectives

- The City Council will continue to monitor drinking water quality in the city and endeavor to ensure good quality drinking water for City residents and businesses in accordance with current legislation.
- Promote good catchment management through continued lobbying of adjoining Authorities to protect City's abstraction point.

- To endeavor to comply with National Policy in respect of lead pipes and other parametric values.

Expansion & Improvements of the Water Distribution System

It is the policy of the City Council to maintain the existing distribution system and in addition to remedy any deficiencies in water pressure by the laying of additional mains, by the reinforcement of the distribution system and by the extension of the ring main system, subject to the availability of funds.

Policy WS.3 Water Distribution System

It is the policy of the Limerick City Council to maintain the existing distribution system and in addition to remedy any deficiencies in water pressure by the laying of additional mains, by the reinforcement of the distribution system and by the extension of the ring main system.

Objectives

- Complete and commission the installation of the Southern Ring Trunk Main infrastructure around the City to service the north of the City ensuring all strategic spurs are completed.
- Complete a study assessing the requirement for connecting the Southern Ring Trunk Main to the 700mm west of the Shannon main and seek necessary funding.
- Review and reconfigure the existing District Metre Area's (DMA's) to accommodate the new Southern Ring Trunk Main.
- Introduce pressure controlling measures in all District Metre Area's (DMA's) to ensure a more consistent pressure level on water distribution systems.
- Renew and rehabilitate all remaining unsuitable water supply mains in an ongoing programme of annual replacement, and in accordance with the mains rehabilitation strategy.
- To cater for the future developments through public and private driven initiatives where production capacity permits.

All new development proposals will be required to implement and install water mains in accordance with the following:

- Water mains as detailed in the Water Services Department specification for laying water mains on Limerick City Council's website.
- Water mains required to be taken in charge by Limerick City Council in the future must be laid in public open space.
- WSCR Boxes must be located on the public footpath on each separate supply to individual residences or business units.
- Have regard for the specifications and details as defined in the DOEHLG '*Recommendations for Site Development Works for Housing Areas*'.
- Comply with all National Policy in respect of water metering.
- Old lead service connections must be replaced from the Water Main on the public road to the building including the installation of a WSCR Box.

Water Conservation

The Limerick City *Water Supply Conservation Project* was initiated in 1997. Under this project the City was divided into 17 Zones called District Meter Areas for Water Distribution Management. Each zone has one or two feeds, which are connected to a telemetry system in City Hall. This system is downloaded every morning and the profiles checked to alert of any changes i.e. bursts or shut valves which may have occurred in the previous 24 hours.

A number of different methodologies are used when pursuing leaks in the different zones from the simple listening stick to the leak noise correlator which is a specially developed electronic device for detecting leaks. The minimum night flows which draw off the system, allows for the identification of areas of leakage and allows assessment to take place identifying leaks. The Limerick City Leakage Reduction and Target Level Review assessed water conservation, district metering and leakage control across the City subdividing it into a number of District Meter Areas (DMA's) with active leakage control being conducted citywide. Work has been ongoing on rehabilitation of water mains in the City in conjunction with the streetscape contracts and following burst history. The City Council, as part of the Water Services Investment Programme 2007-2014, has identified the resources needed to upgrade the City's existing water main infrastructure to ensure issues such as leakage and reduced pressure are addressed as a priority. Added to this, the Council will encourage proposals which serve to reduce the overall demand for water in the City thereby removing an unnecessary strain on the City's infrastructure and environment.

Policy WS.4 Water Conservation

It is the policy of Limerick City Council to encourage development proposals which serve to reduce the overall demand for water in the City thereby removing an unnecessary strain on the City's infrastructure and environment as a whole.

Objectives

- Continue to implement the water conservation management plan as outlined above.
- Provide for an unaccounted for water detection system and continue the fix/find programmes in the supply network.
- Eliminate Common Looped Supplies through the provision of new connections to the boundary of householder's properties if the common looped supply is terminated.
- Reduce water demand through management techniques.
- Reduce demand through water saving technologies i.e. Flow limiters, pressure regulators, leak detection systems, proximity shut off valves and water meters
- Encourage the use of non-potable water such as rainwater and grey water systems to offset water consumption where appropriate, e.g. toilet flushing etc.
- Cater for the future developments through public and private driven initiatives where production capacity permits.

All new development proposals will be required to implement and install water mains in accordance with the following:

- Safeguard against high water consumption and leakage.
- Certification from a suitably qualified engineer with a minimum of €2M Professional Indemnity Insurance, confirming that the development has been pressure tested and is in accordance with good industry standards prior to a water connection application.
- Submit Water Conservation Proposals when applying for planning permission.
- Comply with all National Policy in respect of water metering.
- Old lead service connections must be replaced from the Water Main on the public road to the dwelling including the installation of a WSCR Box.

Foul Water Drainage

The EU Directive on Urban Waste Water Treatment requires that urban areas exceeding 15,000 in population, and located on estuaries, be provided with a treatment plant to at least secondary treatment standard. It further requires a collection system, designed to prevent untreated discharges into receiving waters, and that the discharge of the treated effluent meets all relevant directives and national standards. The new infrastructure will ensure that the EU requirements

for the provision of wastewater treatment facilities are met. There are over 20,000 households within the City limits and up to a further 6,000 households in Counties Clare and Limerick which use the City sewer system. Each household generates on average 380 litres of wastewater per day.

This wastewater treatment facility treats 11 million litres of wastewater per day to eliminate the discharge of raw sewerage into the Shannon River. This project has significantly upgraded the existing sewer network and pumping facilities. The system has been linked to a modern wastewater treatment plant, thereby eliminating untreated discharges to the Shannon and Abbey Rivers from Limerick. The investment is improving river water quality in the whole area, from Parteen in Co. Clare to the Shannon Estuary.

Following the completion of the Limerick Main Drainage Scheme, Phase 1, the City and its Environs is now served by a modern sewer infrastructure. The Limerick Main Drainage infrastructure was designed in 1999 to meet the current and foreseeable need of the City and contiguous areas but the City Council is mindful that continued upgrades to both the foul and surface water drainage systems in the City will be required to ensure that predicted population and economic growth for the City can be adequately and catered for in a sustainable manner.

Policy WS.5 Waste Water

It is the policy of Limerick City Council to provide a high quality sanitary wastewater collection and treatment system to meet the demands of the City's residents.

Objectives

- The development of Limerick Main Drainage Phase 2 will assess the capacities of the current plant, deliver a strategy for reducing the quantity of surface water infiltration into the foul network and extend the network, subject to the availability of finance.
- The Council will continue to upgrade and sustainably develop the drainage system for the City in order to facilitate residential, commercial and industrial development subject to the availability of finance.
- To cater for future development through public and private driven initiatives where treatment capacity permits are necessary.
- The extension of Limerick Main Drainage into the north side of the City to cater for any potential development when finance is made available.
- Continue to have a proactive approach to sewer maintenance in the City and to repair, renew and upgrade existing wastewater collection systems including the separation of foul and storm waters subject to the availability of finance.
- Strictly monitor the O&M Phase (Operation & Maintenance) of the current Waste Water Treatment facility to ensure the protection of the City Councils Assets.
- The City Council will continue to monitor the water quality discharged from the treatment facility and ensure quality discharge water to the River Shannon.
- Where possible and subject to the availability of finance it is the policy of the City Council to encourage and promote the reduction and elimination of the use of septic tanks within its functional area.
- It is an objective to eliminate the use of septic tanks where possible.
- All developments must have regard to the Shannon River Basin Management Plan.

All new development proposals shall adhere to the following:

- Have regard to the policy, national standards and guidelines, of not allowing the discharge of contaminants and greases to the City Council sewers.
- Sewers required to be taken in charge by Limerick City Council in the future shall be laid in public open space.

- Access Junction boxes shall be located on the public footpath on each separate supply to individual residences or business units.
- Have regard for the specifications and details as defined in the DOEHLG '*Recommendations for Site Development Works for Housing Areas*', National and Limerick City Council requirements in respect of discharges.

Surface Water Drainage

Urban development generally results in a high proportion of impervious surfaces, pavements, roadways, roofs etc. This causes a large quantity of surface water run-off into the drainage network.

The City Centre drainage culverts were designed and installed during the 19th Century. At that time a combined piped system was installed catering for both foul and surface water flows with overflows to relieve capacity during heavy rainfall. Since the development of Limerick Main drainage, these combined sewers have been intercepted and the contents treated to EU standards. However the high level of surface water infiltration has had an adverse effect on the economic & hydraulic operation of the treatment plant.

The majority of the newer housing estates have had a separate system of drainage designed and installed. This allows the surface water to be discharged to the surrounding water courses and rivers in a controlled manner.

Drainage practices focus on volume control. Surface water networks designed to convey surface water run-off to underground pipes and on to receiving waters as quickly as possible.

In the design of surface water systems, regard shall be had to the Department of the Environment, Heritage & Local Government Guidelines for Flood Risk Management, current best practice and all relevant technical documents.

Policy WS.6 Surface Water Drainage

It is the policy of Limerick City Council to provide a high quality Surface Water Collection and Disposal System.

Objectives

- To cater for the future developments through public and private driven initiatives where discharge capacity permits.
- Control all discharges from future developments to a maximum of 4 l/sec/ha in general areas around the City and in the areas which contribute to areas of restricted capacity, control all surface water discharges to 2 l/sec/ha through planning & development conditions.
- Control discharges of surface water into drainage systems where the receiving drainage system is at or nearing full capacity. The level of control may be as low as 2 l/sec/ha or no discharge.
- Monitor and control development areas of potential flooding, having regard to '*The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009*', Limerick City Council requirements, current best practice and relevant technical documents.
- Provide an adequate surface water system in order to minimise the risk of flooding.
- To work in conjunction with other public bodies towards a sustainable programme of improvement for riverbanks, back drains, etc.
- To endeavor to maintain and improve all watercourses where necessary to control flooding.

Sustainable Urban Drainage Systems (SUDS)

SUDS techniques aim to improve water quality, water quantity and amenity. It is a holistic approach to minimising the adverse environmental effects of development on natural water resources. It encompasses measures such as rainwater harvesting for non-potable applications such as toilet flushing so as to reduce the burden on the public water supply.

Roofs and paved areas are major contributors to surface water runoff. Green Roof technologies are encouraged, where appropriate, to reduce surface water runoff. Limerick City Council favours the adoption of SUDS techniques in the development of the City as part of the policy to encourage sustainable aspects of urban development.

All New Development Proposals will be required to adhere to the following:

The parameters for a Hydraulic Analysis of the proposed storm water sewer network for any development as indicated:

- Rain Fall intensity : 60mm/hr
- Contributing areas: hard surfaces inclusive of roofs, roads, footpaths and any other hard standing area - 100% impermeable.
- Green areas or park land - 20% impermeable.

Storm water drainage sewers shall be designed to cater for a storm return period of a 1:30 year storm without surcharge and to cater for a 1:100 year storm without flooding

Designers shall have regard to '*The Planning System & Flood Risk Management –Guidelines for Planning Authorities' 2009*, at the design stage of any possible development site.

Policy WS.7 Sustainable Urban Drainage Systems (SUDS)

It is the policy of Limerick City Council to ensure that all new developments incorporate sustainable urban drainage systems at the application stage.

Objectives

All new Development Proposals will be required to adhere to the following:

- Complete a percolation and infiltration tests prepared by an Engineer, with a minimum of €2m Professional Indemnity Insurance, for the proposed route of the SUDS and designed to suit site specific requirements.
- Allow sufficient land take for SUDS when planning the site and also consider the region as a whole in association with adjoining lands and their requirements in designing SUDS. Developers may be required to set aside lands to cater for not only their own SUDS but also regional SUDS.
- Designed in accordance with a surface water management train.
- SUDS shall not be used where ground water is at or where a high water table is a risk.
- Avoid pipes where possible and utilize the SWALES concept allowing for maintenance of such SWALES.
- SUDS shall be designed with wildlife in mind.
- Upstream silt traps should be incorporated in SUDS.
- Attenuate run off to pre development values or better.
- A method statement must be produced to identify and mitigate the maintenance hazards and all potential pollution hazards both during construction and operation in the future.
- All SUDS must be designed with all stages of construction approved and certified by a bonded chartered engineer.

Flood Protection

Flooding results from a combination of human activity and natural physical conditions. There is mounting evidence and consensus among scientists that the global climate is changing as a result of human activity which will lead to an increase in sea levels and consequently the threat of flooding. Flood risk will therefore need to be considered at all stages of the land use planning process and managed in an environmentally sensitive way.

Like other natural processes, flooding cannot be completely eliminated, but its impacts can be minimised with proactive and environmentally sustainable management. The accepted national policy response to flood protection is now to manage the risk to life and property as sustainably as possible, and to consider flood risk and its related impacts on development on a catchment basis rather than on an individual location basis. This will facilitate sustainable development through the reduction of future flood damage and hence reduce the associated potential economic and social costs.

The Department of Environment, Heritage & Local Government in partnership with the Office of Public Works (OPW) released draft guidelines in September 2008, these guidelines have since been adopted and are titled *'The Planning System & Flood Risk Management Guidelines for Planning Authorities', 2009*.

These guidelines require the planning system at National, Regional and local levels to:

- Avoid development in areas at risk of flooding by not permitting development in flood risk areas, particularly floodplains, unless where it is fully justified that there are wider sustainability grounds for appropriate development and unless the flood risk can be managed to an acceptable level without increasing flood risk elsewhere and where possible, reducing flood risk overall;
- Adopt a sequential approach to flood risk management based on avoidance, reduction and then mitigation of flood risk as the overall framework for assessing the location of new development in the development planning processes; and
- Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

Policy WS.8 Flood Protection

It is the policy of Limerick City Council to continue to work towards reducing flooding within the City and ensure that all new development proposals comply fully with the requirements of 'The Planning System & Flood Risk Management Guidelines for Planning Authorities', 2009, and any additional guidance introduced during the lifetime of the Development Plan.

Objectives

- Avoid the risk of flooding by not permitting development in flood risk areas, particularly floodplains, unless where it is fully justified that there are wider sustainability grounds for appropriate development and unless the flood risk can be managed to an acceptable level without increasing flood risk elsewhere and where possible, reducing flood risk overall.
- Adopt a sequential approach to flood risk management based on (1) avoidance, (2) reduction and only then (3) mitigation of flood risk as the overall framework for assessing the location of new development.
- Incorporate flood risk assessment into the Development Management process and planning appeals.
- Cater for future developments through public and private driven initiatives where capacity permits.

- In association with the Office of Public Works, develop a Flood Risk Map of the City in accordance with Section 14.6 of the requirements of the EU Floods Directive (Directive 2007/60/EC).

Limerick City Council shall have full regard to these guidelines within the Limerick City Development Plan 2010-2016, with particular reference to lands zoned for development. [In this regard Limerick City Council have provided flood risk assessment maps in Appendix II. These maps indicate the zones of High Probability and Moderate Probability of flooding as set out in Chapter 3 of the guidelines. Proposed developments in these zones must have regard to the guidance provided.](#)

Other available information should also be considered such as the Office of Public Works (OPW) Flood Mapping www.opw.ie in order to identify areas that are known to have flooded in the past within and around the boundary of Limerick City. Provisions and recommended policies from studies produced will be examined and integrated into the current City Development Plan when available and where feasible. Until such time as comprehensive information and guidance is available on flooding in the City, a flexible approach is needed to take account of flood risk to ensure that appropriate measures are taken wherever the need arises. When considering development in flood risk areas regard shall be given to both the *Precautionary Principle* and *Sequential Testing* as detailed in the '*Planning System and Flood Risk Management Guidelines for Planning Authorities*', 2009.

Developers/Applicants proposing developments in an area where there is a flood risk shall:

- Provide a detailed study and modeling exercise of the catchments, Risk Assessment of whether the proposed development is likely to be affected by flooding (including for climate change), whether it will increase flood risk elsewhere and of the measures proposed to deal with these effects and risks in accordance with '*The Planning System and Flood Risk Management Guidelines for Planning Authorities*', 2009.
- Satisfy the planning authority that any flood risk rising from the proposal will be successfully managed with the minimum environmental effect to ensure that the site can be developed and occupied safely.
- Comply with Limerick City Council planning authority requirements on finished floor levels.

Policy WS.9 Flood Risk

It is the policy of Limerick City Council to ensure that development should not itself be subject to an inappropriate risk of flooding nor should it cause or exacerbate such a risk at other locations.

OPW Guidelines - www.flooding.ie

- Development that is sensitive to the effects of flooding will generally not be permitted in flood prone or marginal areas. (Preventing such development, where flooding would result in significant hardship, financial losses or costs, will avoid increasing the existing level of risk and will protect the proposed new development from the human (stress and ill-health, for example) and financial costs of flood events. It will also eliminate or reduce expenditure on flood protection measures and compensation.
- Appropriately designed development, which is sensitive to the effects of flooding, may be permissible in flood plains provided it does not reduce the flood plain area or otherwise restrict flow across floodplains. (Examples of such development might include park areas, sports pitches, certain types of industry, warehousing, etc. designed to be flood resistant and/or insensitive. Such development should only be permitted provided

- it incorporates adequate measures to cope with the ever-existent flood risk, e.g. adequate drainage systems, safety measures, emergency response facilities and/or warning and response systems and where it is considered that flooding would not result in significant hardship/financial loss or cost.)
- Development must so far as is reasonably practicable incorporate the maximum provision to reduce the rate and quantity of runoff. e.g.:
 1. *Hard surface areas (car parks, etc.), should be constructed in permeable or semi-permeable materials.*
 2. *On-site storm water ponds to store and/or attenuate additional runoff from the development should be provided.*
 3. *Soak-aways or french drains should be provided to increase infiltration and minimise additional runoff.*
 - Such sustainable design/construction measures are desirable in most areas and essential in floodplains, areas liable to flooding, and areas where the conveyance capacity of watercourses is marginal. In all of these cases development that reduces the rate of absorption or increases the rate of runoff increases the risk of flooding of lands and properties downstream.
 - For developments adjacent to watercourses of a significant conveyance capacity any structures (including hard landscaping) must be set back from the edge of the watercourse to allow access for channel clearing/maintenance. (A setback of 5m-10m is required depending on the width of the watercourse).
 - Development consisting of construction of embankments, wide bridge piers, or similar structures will not normally be permitted in or across flood plains or river channels. (Such structures restrict/obstruct flow and increase the risk of flooding to property and land upstream. If it is considered necessary, in exceptional cases, to permit such structures, they should be designed to minimise and/or compensate for any potential negative effects).

All new development must be designed and constructed to meet the following minimum flood design standards:

- For Urban areas or where developments (existing, proposed or anticipated) are involved - the 100 year flood;
- For Rural areas or where further developments (existing, proposed or anticipated) are not involved - the 25 year flood;
- Along the Coast and Estuaries - the 200 year tide level;
- Where streams open drains or other watercourses are being culverted - the minimum permissible culvert diameter is 900mm. (Access should be provided for maintenance as appropriate.)

The application of higher design standards may be appropriate in certain cases where the level of risk and/or uncertainty warrant it e.g. hospitals or other emergency services, main roads, chemical plants, cultural repositories, areas of karst etc.

A ***Flood Impact Assessment*** and proposals for the storage or attenuation of run/off discharges (including foul drains) to ensure the development does not increase the flood risk in the relevant catchment must accompany planning applications for development of areas exceeding 1 hectare.

A certificate from a competent person as agreed with the Water Services Department of Limerick City Council with a minimum of €2m Professional Indemnity Insurance that the development

will not contribute to flooding within the relevant catchment, must accompany planning applications for development of areas of 1 hectare or less.

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