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Environment and Infrastructure

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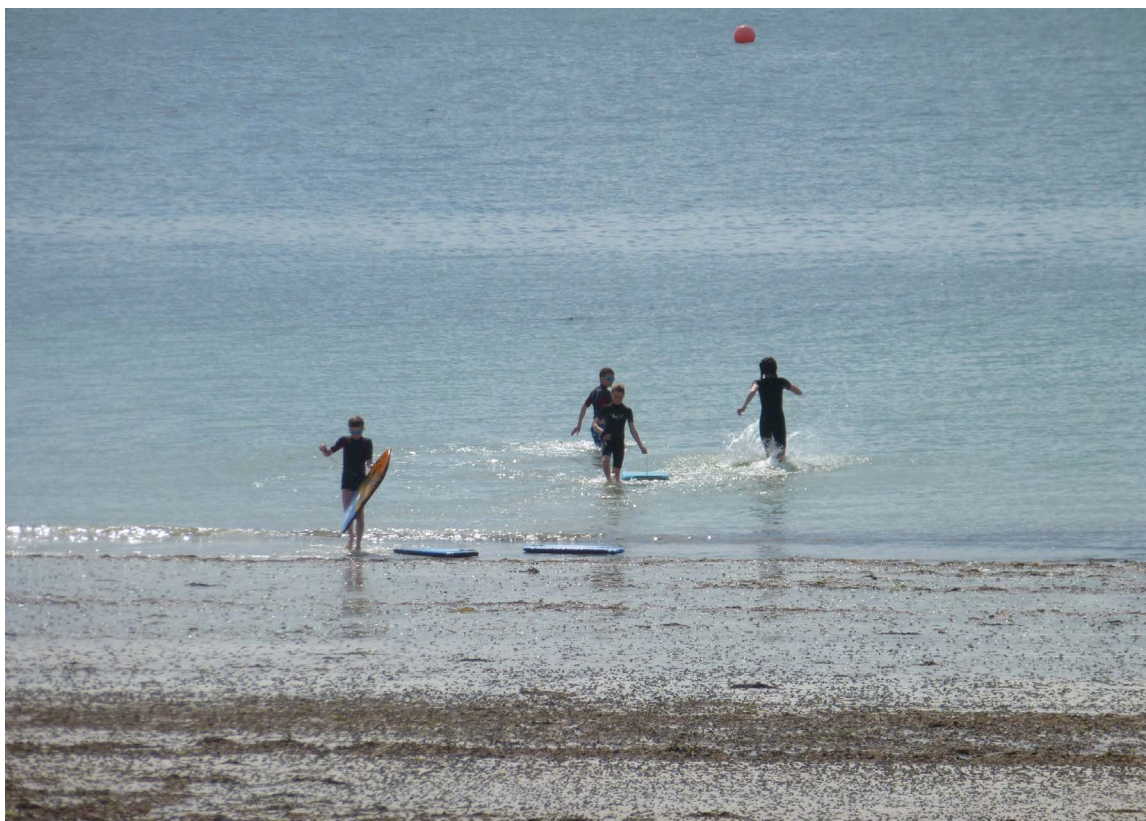
9.1 Context

The sustainable management of water, waste and other environmental services is necessary to safeguard the environment, ensure health and wellbeing and to support the sustainable growth of the city. Climate change is also an important consideration. Planning policy must incorporate consideration of future climate conditions and adaptation options including flood risk, accommodation of renewable energy sources, energy conservation and improved management of resources.

Issues such as a sufficient supply of clean water, good air quality and sustainable waste management are of major importance for the city. The plan supports the provision of critical infrastructure in conjunction with relevant statutory providers including Irish Water, to address these issues in a manner that protects public health, the environment and addresses the challenges of climate change. The SEA and AA are important tools in ensuring that plan policy does not have an unduly negative impact on the environment.

The plan also supports new technology and a smart city approach in order to enhance the quality and performance of urban services and to reduce costs and consumption of resources enabling the city to grow and respond to economic, social and environmental challenges. Digital technologies in particular, are seen as key to future proofing the city and enabling the transition to a smart city. This builds on the growth ambitions of the RSES which focus on building a competitive economy and a well-connected region through the delivery of digital infrastructure such as a high-quality ICT network and delivery of the National Broadband Plan.

Infrastructure to ensure a sufficient and secure energy supply is also critical for the city and plan policy supports provision in liaison with relevant statutory providers including Eirgrid, ESB and Bord Gáis. The transition away from fossil fuels and the move towards more sustainable energy sources is also a key policy focus of the plan.



9.2 Flood Risk Assessment

Climate change impacts which include more intense storms, storm surges, sea level rise and increased occurrences of long high-intensity rainfall events, contribute to an increased likelihood of flooding. The city is particularly vulnerable to flooding by virtue of its location on the Atlantic coast and River Corrib and this requires a comprehensive approach to flood management.

The Development Plan can play an important role in flood management through policy and land use zoning and to date large sections of the natural flood plains of the coast and River Corrib have been protected from compromising development. Other policies in relation to control of drainage and surface water management also support flood management. In the preparation of the Plan, in accordance with *The Planning System and Flood Risk Management, Guidelines for Planning Authorities (2009)*, a Strategic Flood Risk Assessment (SFRA) has been carried out to assess the implications for planning policy of flood risk. The SFRA adopts a largely precautionary approach to land use zoning to avoid directing development towards areas at risk of flooding. Areas subject to development and identified as being at risk of flooding, are assessed through a justification test, to determine their suitability and requirements for site-specific flood risk assessment and detailed mitigation are considered on a site by site basis.

The Office of Public Works (OPW) is the lead agency for flood risk management. In 2011 the OPW completed a national Preliminary Flood Risk Assessment (PFRA), carried out under the EU Floods Directive, which identified areas of potentially significant flood risk. Subsequent to this, the OPW undertook the Catchment Flood Risk Assessment and Management study (CFRAMs) which established a long term strategy and measures for the management of flood risk in the city and wider Corrib catchment. It concluded that a flood relief scheme would be a viable and effective option to protect the city against fluvial and tidal flood risk, to provide for future resilience, and to enable the city to develop in a sustainable way.



The Coirib go Cósta Galway City Flood Relief Scheme commenced in November 2020. The objective of the scheme is to assess, design and deliver a viable, cost-effective and environmentally sustainable flood relief scheme for Galway City. Coirib go Cósta, while primarily focused on addressing the sustainable and effective management of flood risk, will ensure that the design of any measures, in particular structural measures, takes cognisance of the sensitivity of the distinctive context of the city. Where development is

required it must complement the character, sensitive environment, cultural legacy and built form of the city in any design. The design of the flood relief measures will be required to include for creative landscape architectural solutions, which can, in addition to addressing flood risk management, bring value to the urban context and public realm and integrate with other advancing projects. The project will facilitate public consultation at key stages of the process. Subject to planning consent, construction is programmed to start in 2025 with an estimated 36 month build timescale.

Coastal erosion is also a risk for certain areas of the city. Where necessary, the Council will collaborate with relevant stakeholders to facilitate environmentally and economically sustainable coastal protection works in order to address coastal erosion and flooding in the most vulnerable areas of the city. Any future defence works within the shoreline will take account of the long-term interrelationships between defences and coastal processes in the wider area, the need to protect the environment and natural habitats and include opportunities for maintaining and enhancing the natural coastal environment, where deemed appropriate. Specifically where coastal erosion measures are being progressed for Sailin to Silverstrand these shall be examined for the capacity to incorporate amenity measures including a link of the walkway from Blackrock to Silverstrand.

Policy 9.1 Flood Risk

1. Support, in co-operation with the OPW, the implementation of EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No, 122 of 2010) and the DECLG and OPW Guidelines for Planning Authorities, the Planning System and Flood Risk Assessment Management (2009), updated/superseding legislation or departmental guidelines and have regard to the findings and relevant identified actions of the Corrib Catchment Flood Risk Management (CFRAM) Study.
2. Support and facilitate the implementation of the Coirib go Cósta Galway City Flood Relief Scheme in conjunction with the OPW to support a climate resilient city, protect against flooding and minimise the impact of future climate events. Support in general the associated mitigation and adaptation measures in order to prevent flooding and coastal erosion, subject to appropriate environmental, visual, built heritage and other relevant considerations.
3. Ensure the recommendations of the Strategic Flood Risk Assessment (SFRA) for the Galway City Development Plan 2023-2029 are taken into consideration in the assessment of developments in identified areas of flood risk and require site specific Flood Risk Assessment (FRA) and associated design and construction measures where appropriate.
4. Protect and promote sustainable management and uses of water bodies and watercourses from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains.
5. Ensure flood risk is incorporated into the preparation of any future local area plans, framework plans and masterplans in the city.
6. Ensure any proposed measure designed to alleviate flooding/coastal erosion is subject to Appropriate Assessment in accordance with Article 6 of the EU Habitats Directive, where appropriate.
7. Continue to protect the coastal area and the foreshore and avoid inappropriate development in areas at risk of coastal erosion and/or would cause and escalate coastal erosion in adjoining areas.
8. Protect and maintain, where feasible, undeveloped riparian zones and natural floodplains along the River Corrib and its tributaries.

9.3 Water Quality

A high-quality, clean, drinking water supply and good bathing water quality is important for the future economic development, physical growth and public health of the city. There is a diverse range of natural water assets in the city, including the sea, rivers, lakes, canals and ground water. It is vital that these water bodies are protected against pollution and that water quality is maintained at a good level.

The EU Water Framework Directive (WFD) established an integrated catchment based approach for the protection, improvement and sustainable use of inland waters, including groundwater, with the aim of improving the quality of the water environment. The WFD aims to prevent deterioration of the status of all waters and ensure good status as a minimum. It also aims to achieve compliance with the requirements for designated protected areas which are deemed to require special protection because of their particular importance. These areas include bathing waters, sources of drinking water, areas in which shellfish are grown or harvested, locations with sensitive habitats and species, or areas that are particularly affected by eutrophication due to excessive inputs of phosphorus and/or nitrogen from urban waste water.

The WFD is implemented through the national River Basin Management Plan (RBMP). The draft RBMP for the period 2022-2028 is on public consultation until March 2022 and final approval is expected in 2022. It sets out the measures that are necessary to protect and restore water quality in Ireland. The overall aim of the plan is to ensure that natural waters are sustainably managed and that freshwater resources are protected so as to maintain and improve the water environment. Implementation of the plan is shared across a range of bodies including the local authorities.

The Local Authority Waters Programme (LAWPRO) was established in 2016 as a national shared service on behalf of the local authorities and the City Council works in conjunction with LAWPRO to co-ordinate implementation of the WFD.

Good quality bathing water is an important natural resource for recreational use as well as being a significant tourism attraction. The Bathing Water Directive 2006 and Bathing Water Quality Regulations 2008 set strict standards for the management of bathing water quality. The Council monitors and assesses bathing water quality, provides bathing information, takes action to protect health and to reduce the risk of pollution of these bathing areas. The Mutton Island Wastewater Treatment Plant (WWTP) has led to major improvements in bathing water quality in Galway Bay. This is confirmed by the securing of EU Blue Flag status and the National Green Coast Award for Silverstrand and Salthill beaches. All beaches play a major role as recreation and coastal amenity areas for the city including Silverstrand, Salthill, Grattan and Ballyloughane beaches. The Council, in partnership with Irish Water and other stakeholders, will work to maintain and improve bathing water quality for all beaches within the city.

Policy 9.2 Water Quality

1. Support the actions of the River Basin Management Plan 2018-2021 and future River Basin Management Plan in order to promote and achieve a restoration of good status, reduce chemical pollution and prevent deterioration of surface, coastal and groundwater quality, where appropriate.
2. Continue to pursue the maintenance of good bathing water quality at the city beaches through monitoring and management actions in accordance with the Bathing Water Quality Regulations 2008.
3. Ensure development adheres to prevailing environmental standards and guidelines and accords with emerging legislation and strategy on the marine environment.

4. Maintain and extend the Blue Flag Beaches status in regard to water quality, infrastructure and amenity provision for beaches in the city.
5. Protect the city's groundwater resource in accordance with the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (Groundwater) Regulations, 2010 (SI No. 9 of 2010) or any updated legislation and limit any development which has potential to impact the objectives for protection, enhancement and/or restoration.
6. Minimise and control discharges to inland surface water bodies, in particular Terryland/Sandy River, groundwater and coastal waters to prevent water pollution and protect the environment.

9.4 Water Services

Irish Water has responsibility for water services infrastructure and treatment facilities for the city since 2014. Currently at local level, through Service Level Agreements, the City Council retains its role in facilitating the provision of water services, in conjunction with Irish Water. The Council retains responsibility for surface water services and remains a water protection authority through its functions relating to water quality and monitoring and the issuing of discharge licences to the surface water network. Irish Water is responsible for the issuing of trade discharge licences to foul/combined sewers.

It is an objective of Irish Water to provide both drinking water and wastewater strategic infrastructure capacity in a manner which supports the policy direction of the NPF and RSES. Irish Water will continue to develop and improve water and waste water services to support the planned development in the city as outlined in the Core Strategy, subject to the availability of the necessary capital investment and in compliance with environmental objectives and regulations. A good quality and plentiful water supply and adequate wastewater infrastructure is necessary, not only to meet growth ambitions of Galway as an NPF Regional City, but also to achieve environmental and public health standards.

The Council will work with Irish Water in identifying water services investment requirements and priorities in the city and support the delivery of the objectives of the *Water Services Strategic Plan (WSSP)* which outlines the strategic direction of Irish Water up to 2040.

A National Water Resource plan (NWRP) is currently being prepared by Irish Water which will seek to achieve a sustainable, secure and reliable public water supply over the next 25 years. As part of the plan, a regional water resources plan will be developed with a focus on water conservation measures, leak reduction, network efficiency and sustainable water supplies.

In relation to waste water services, Irish Water's wastewater treatment capacity register for Galway City outlines the capacity available at Mutton Island Wastewater Treatment Plant (WWTP). It has a current design load of 170,000 PE (population equivalent). The current load reported in the Annual Environmental Report to the EPA for Galway was circa 103,000 PE for 2020. In this regard it is anticipated that the WWTP has capacity to accommodate the projected growth over the plan period 2023-2029. In order to provide for the targeted growth in the Galway metropolitan area in the medium and long-term, the preparation of a Greater Galway Area Drainage Strategy will commence in 2022 which will consider future waste water networks and treatment options. Previous proposals for the provision of a Galway East Main Drainage WWTP will be revisited as part of the strategy.

A Drainage Area Plan (DAP) for the city is currently being prepared and is due for completion in 2023. This plan will assess the wastewater network in detail to identify issues and needs. In parallel with the DAP, a Network Development Plan will also be advanced as a high-level study to help inform servicing of undeveloped zoned sites within the city. The Council will continue to work with Irish Water to ensure that these plans are prepared in

the context of planned city growth. With particular reference to the Ardaun LAP area, work is ongoing to progress the design and delivery of waste water services within the Phase 1 southern section. The project includes the provision of a crossing of the dual carriageway and a new wastewater storage tank at Merlin Park Pumping Station No.1. The DAP and Network Development Plan will consider how Phase 2 of Ardaun LAP will be serviced.

Irish Water in conjunction with the City Council will continually progress measures such as sewer rehabilitation activities, capital maintenance activities, stormwater overflow monitoring and will continue to monitor the performance of the networks to ensure that the most urgent works are prioritised as required.

In relation to water supply for the city, the growth of population in the city has been coupled by increases in water demand and the volume of water use per head of population. The city is supplied by the Galway City Public Water Supply (PWS) at Terryland and supplemented by the Tuam Regional Water Supply. These water supplies form the Corrib Water Resource Zone.

The Galway City PWS treatment plant at Terryland has a capacity of 55 mega litres per day (MLD). Recent leakage reduction activities undertaken by Galway City Council and Irish Water have led to a significant reduction in demand, with approximately 36.3 MLD supplied by the treatment plant into the water network in February 2021. While it is envisaged that there is adequate capacity to meet the projected increase in population in the city over the Development Plan period, plans to provide a new intake on the River Corrib will enhance supply to cater for future growth and together with a rising main to Clifden Hill reservoir will improve security of supply. It is envisaged that the construction of the new intake which is located on City Council lands south of the Quincentenary Bridge will advance in 2022.



The full options assessment stage of the *NWRP* is currently progressing in consultation with the Water Services department of Galway City Council. This will identify the preferred interim and long-term interventions required to ensure a sustainable water supply for the city. The Council will also continue to encourage water conservation initiatives including rain water harvesting and grey water recycling in developments in liaison with Irish Water.

Irish Water and the City Council will continue to progress leakage reduction and mains rehabilitation activities, all of which are essential to facilitate compact growth in the city and will continue to monitor the performance of the networks to ensure that the most urgent works are prioritised as required. Mains rehabilitation works have been carried out as part of the Leakage Reduction Programme in recent years on distribution and trunk mains throughout the city and suburbs, including at Castlegar, Mervue and Briarhill.

With regard to the Ardaun LAP area, Irish Water in conjunction with the City Council have identified water infrastructure requirements which are currently at the detailed design stage. They involve local network improvement and reinforcement. With regard to surface water drainage within Ardaun, preliminary design options for surface water discharge are being considered.

Policy 9.3 Water Services

1. Work in close liaison with Irish Water in the operation of water and wastewater facilities in the city and the upgrade and expansion of the network and the delivery of strategic projects such as the Terryland Water Treatment Plant Intake Works.
2. Support the delivery of the objectives of the Irish Water Water Services Strategic Plan (2015) and implementation of the Irish Water Capital Investment Plan 2020-2024.
3. Work in conjunction with Irish Water to ensure the provision and maintenance, of a high quality and efficient water supply capable of meeting existing and future needs of the city and support any ongoing water mains rehabilitation and water conservation projects.
4. Encourage all significant water users to use best practices in water conservation and continue to promote water conservation measures in the design of all new development in the city, such as rainwater harvesting and re-use of grey water, in liaison with Irish Water.
5. Support and liaise with Irish Water in the provision of a sustainable and effective wastewater drainage collection and treatment system capable of meeting the existing and future needs of domestic, commercial and industrial users in the city and MASP area.
6. Support the Irish Water ongoing watermain rehabilitation and water leak reduction programme in order to conserve the city's water supply.
7. Support the decommissioning of existing individual effluent treatment systems which include septic tanks at locations which include Ballyloughane, where there is a feasible option to connect to the public sewer network. Galway City Council will collaborate with Irish Water in this regard.

9.5 Sustainable Urban Drainage Systems (SuDS)

The urban environment with its associated impermeable surfaces, such as roofs, roads and car parks, prevents the natural percolation of rainfall into the ground which can result in excessive volumes and flows of surface water runoff. Sustainable Urban Drainage Systems (SuDS) aims to minimise surface water run-off associated with development, using a series of water management measures designed to drain surface water in a more sustainable manner, reflecting natural drainage processes.

The use of SuDS reduces the amount and rate of surface water flow by a combination of measures including infiltration into the ground and attenuation of surface water in storage areas to slow down the movement of water. While to date there has been a heavy reliance on underground storage tanks to provide attenuation, there is a move towards nature based SuDS such as ponds and basins, wetlands, planted filter strips and swales, permeable

surfaces, green facades and green roofs. Nature based SuDS are designed to deal with rainfall in urban areas in a manner as close as possible to that pertaining in the natural environment. The benefits are wide ranging, including a reduction in pollution from urban run-off, reduced flooding and reduced loading of combined sewer systems. They can be positive landscape features within the urban environment, providing amenity benefits and contributing to biodiversity.

LAWPRO in conjunction with the DHLGH are developing an implementation strategy for the development of Water Sensitive Urban Design, which includes nature based SuDS and when completed will provide useful guidance in an urban context. The draft River Basin Management Plan also recognises the benefits of using nature based surface water management and the need to move away from engineering solutions. In this regard, an action of the draft RBMP is to provide interim guidance to local authorities on measures to be implemented to support the delivery of a greater focus on nature based solutions in advance of a national implementation strategy. The Council will have regard to this guidance when published and in the interim will consider international best practice guidance manuals.

Policy 9.4 Sustainable Urban Drainage Systems (SuDS)

1. Ensure the use of Sustainable Urban Drainage Systems (SuDS) and sustainable surface water drainage management, wherever practical in the design of development to enable surface water run-off to be managed as near to its source as possible and achieve wider benefits such as sustainable development, water quality, biodiversity local amenity and climate adaptation.
2. Promote the use of green infrastructure e.g. green roofs, green walls, bioswales, planting and green spaces for surface water retention purposes as an integrated part of SUDS and to deliver all the ancillary benefits.

9.6 Control of Major Accident Hazards (Seveso III Directive)

The EU Directive on the Control of Major Accident Hazards Seveso III came into force on 1 June 2015, replacing the Seveso II Directive. The Directive deals specifically with the control of major accident hazards involving dangerous substances and limits their consequences for human health and the environment and is implemented by the COMAH (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015. Land use planning is one of the measures in the Seveso III Directive to safeguard against the effects of a major accident in the unlikely event that one occurs. The Directive requires that controls are in place on developments at qualifying establishments and in their vicinity.

The Planning & Development Regulations 2001 (as amended), along with the COMAH Regulations 2015 cover this aspect of the Directive and the Health and Safety Authority (HSA) are required to provide technical advice to the planning authorities, either on a case-by-case basis or generically. Currently there is one Seveso III site within the city, Topaz Energy Galway Terminal located in New Docks, Galway Harbour Board Enterprise Park. It is classified as an upper tier establishment. A consultation zone, of 400m, is applied by the HSA in relation to Seveso III establishments and any



relevant proposals for development within these zones or any future amended zones will be referred to the HSA for guidance. This technical guidance will be taken into account in the overall assessment of the siting of new Seveso III establishments, modification of existing establishments and development in the vicinity of such establishments, in addition to standard planning criteria. The city's Major Emergency Plan addresses potential emergencies which may arise from the current Seveso III site.

Policy 9.5 Safe Environment - Control of Major Accident Hazards Directive (Seveso III Directive)

1. Consult with the Health and Safety Authority (also known as the National Authority for Occupational and Health Standards) when changing any policies/objectives and assessing any proposed relevant developments in or in the vicinity of sites identified under the Control of Major Accident Hazards Directive (Seveso III Directive), in order to prevent major accidents involving dangerous substances and to limit their consequences to the environment and community.
2. Ensure that major developments comply with the requirements of the Galway City Major Emergency Plan.

9.7 Air Quality

Clean air is of critical importance to supporting human health, the environment and ecosystems. In the city, air quality is impacted largely by emissions from home heating and transport. Air quality can deteriorate significantly in winter when an increased demand for energy coupled with periods of cold still weather increase the concentrations of pollutants in the atmosphere. Exposure to high levels of air pollution are known to impact respiratory and cardiovascular health and particulate matter from the burning of solid fuels is estimated to cause 1,300 premature deaths every year in Ireland.

While air quality is described as generally good in Ireland by the EPA Report on Air Quality in Ireland 2019 there are localised issues relating to the burning of fossil fuels for heating and transport. Under the National Ambient Air Quality Monitoring Programme (AAMP) the EPA collects data for the city at a monitoring station in Ragoon and assesses it against legal limits set by the EU Clean Air for Europe Directive (CAFE) and WHO guideline values. The most recent air quality recorded at Ragoon indicated that levels were within EU limit values.

The Council supports the implementation of measures that improve air quality and reduce exposure to pollution such as the 'Smoky Coal Ban' Regulations 2012 which bans the burning of restricted fuels in the city. Climate adaptation and mitigation policies to support a move from fossil fuels to renewable energy, modal change to sustainable transport and the promotion of energy efficient building design will also deliver significant reductions in sources of air pollution. The continued enhancement of the city's green network and increased urban greening and tree planting will also support better air quality naturally removing pollutants from the air.

A National Clean Air Strategy is currently being developed which will identify and promote the measures required to reduce air pollution and promote cleaner air. The Clean Air Strategy will support the development of a regional approach to air quality enforcement and the City Council will support the initiatives which emanate from the proposed Strategy.

9.8 Noise

Environmental noise is described as unwanted sound arising from all areas of human activity such as transport, construction or industry. Perception and tolerance of noise varies from person to person but exposure to excessive noise can have an adverse impact on health, wellbeing and quality of life.

The *Galway City Noise Action Plan 2019-2023* (NAP) was prepared by Galway City Council in accordance with the requirements of the EU Directive 2002/49/EC European Communities (Environmental Noise) Regulations 2018. The aim of the *NAP* for Galway City is to prevent and reduce levels of environmental noise exposure associated with major roads and protect environmental noise quality, particularly in sensitive areas, from the impacts of road noise. The *NAP* includes strategic noise maps to determine the exposure to environmental noise on a number of roads in the city. These will be taken into consideration in the assessment of relevant development proposals.

Wherever possible, the siting of new development should have regard to noise sensitive locations and implement acoustic design measures to minimise noise impact. These measures may include, but are not limited to, building placement and orientation, building materials, setback and separation between noise sources and receptors, landscaping, noise barriers and buffer zones.

Galway City Council, through the planning system, will aim to minimise the adverse impacts of noise by controlling and segregating noise intensive developments away from sensitive areas and requiring appropriate mitigation. Where it is considered that a proposed development is likely to create disturbance due to noise, conditions will be placed on new developments and uses to mitigate noise impact, to limit the hours of operation and to control the level of noise generated.

Within the busy city environment, there are areas which can provide respite from the high level of urban noise. Quiet areas, which are areas which have lower sound levels, can be important places for rest and quiet contemplation in the city's environment and can have a positive impact on quality of life and wellbeing. Within green spaces, it can allow for enjoyment of surrounding nature and offer a sense of tranquillity. In this regard the Council will consider initiatives to provide for quiet areas in the city.

Policy 9.6 Air Quality and Noise

1. Maintain air quality to a satisfactory standard by regulating and monitoring atmospheric emissions in accordance with EU policy directives on air quality and Ambient Air Quality and Cleaner Air for Europe (CAFÉ) Directive (2008/50/EC) by promoting and supporting initiatives to reduce air pollution and by increasing the use of sustainable transport modes and developing urban woodlands, encouraging tree planting, conserving and creating green open space.
2. Ensure the design of development incorporates measures to minimise noise levels in their design and reduce the emission and intrusion of any noise or vibration which might adversely impact on amenities, in particular residential amenities where appropriate.
3. Consider the details of Galway City Council Noise Action Plan 2019-2023 in the assessment and design of relevant development applications in the interests of protecting future amenity.
4. Implement environmental noise mitigation measures as outlined in Galway City Council Noise Action Plan 2019-2023.
5. Promote best practice in the implementation of radon prevention and mitigation measures in partnership with relevant agencies.

9.9 Light Pollution

Artificial light is important in creating a safe and secure environment. However excessive levels of light and poorly designed artificial lighting schemes have negative impacts on wildlife, ecosystems and human health. In addition, excessive levels of artificial light is an inefficient use of energy and a source of carbon emissions. There is a need to strike a balance between the desire for illumination and security with the control of light pollution and the avoidance of light spillage and glare.

Careful consideration should be given to the location and design of lighting fittings and columns, including street lighting, security lighting, decorative lighting and floodlighting, to ensure that such installations and fixtures do not detract from the visual appearance and character of a building, protected structure, streetscape, protected view or surrounding area. Luminaires and lighting fixtures should be kept to a minimum and designed, installed and managed to ensure glare, light spill and energy use is kept to a minimum. Proposals should have regard to Galway City Council Public Lighting Pre Planning Guidance and *BS/5489 1:2020. Design of road lighting - Part 1: Lighting of roads and public amenity areas*. The introduction of light emitting diode (LED) lighting, while more energy efficient, can give rise to increased glare, impact on human vision and circadian rhythms and disrupt biodiversity and natural habitats. It is recommended that, where possible, warmer colour LED luminaires be installed to minimise adverse impacts. In assessment of development proposals the Council will have regard to the Guidance Note GN01/21 *The Reduction of Obtrusive Light - Institute of Light Professionals (2021)*.

Policy 9.7 Light Pollution

1. Ensure the design of external lighting minimises the incidence of light pollution, glare and spillage into the surrounding environment and has due regard to the visual and residential amenities of surrounding areas.
2. Require all new developments to be designed with the inclusion of energy efficient lighting schemes.
3. Lighting on linear infrastructures, including greenways and blueways, should be carefully managed to ensure coherence of the supporting habitats of European sites, as outlined in Article 10 of the Habitats Directive
4. Ensure the design of external lighting does not have an adverse impact on wildlife and ecosystems and encourage the use of dark zones and sensor lighting where feasible.

9.10 Waste Management

The proper management of waste is fundamental to sustainable development and essential to protecting public health and maintaining a high quality environment in the city. The approach to management of waste is based on a hierarchy of prevention, minimisation, reuse, recycle and energy recovery with the level of waste going to landfill kept to a minimum. It seeks to maximise waste as a resource. At a global level, the extraction of resources and the disposal of waste, has to date been largely along a linear consumption model, where raw materials are taken, goods are produced and then disposed of at end of life. This level of waste generation and use of raw materials is unsustainable and is a major cause of greenhouse gas emissions and habitat and biodiversity loss. The aim therefore of current waste management policy is to promote a circular economy whereby products and materials are maintained in use for as long as possible. They are treated as a resource that can be reused and recycled back into the loop, creating beneficial uses for products which were previously considered as waste and designing products that are more durable and capable of repair or repurposing.

National waste management policy is set out in the *Waste Action Plan for a Circular Economy (2020 - 2025)*. It is focused on facilitating the transition to a circular economy through a suite of actions aimed at capturing the maximum value of all resources across various waste streams. It is consistent with EU policy supporting the transition to a circular economy including the European Green Deal and ties in with the waste hierarchy approach. The Circular Economy Bill 2021 is currently at draft stage and will, when enacted, set out a statutory framework to enable the transition.

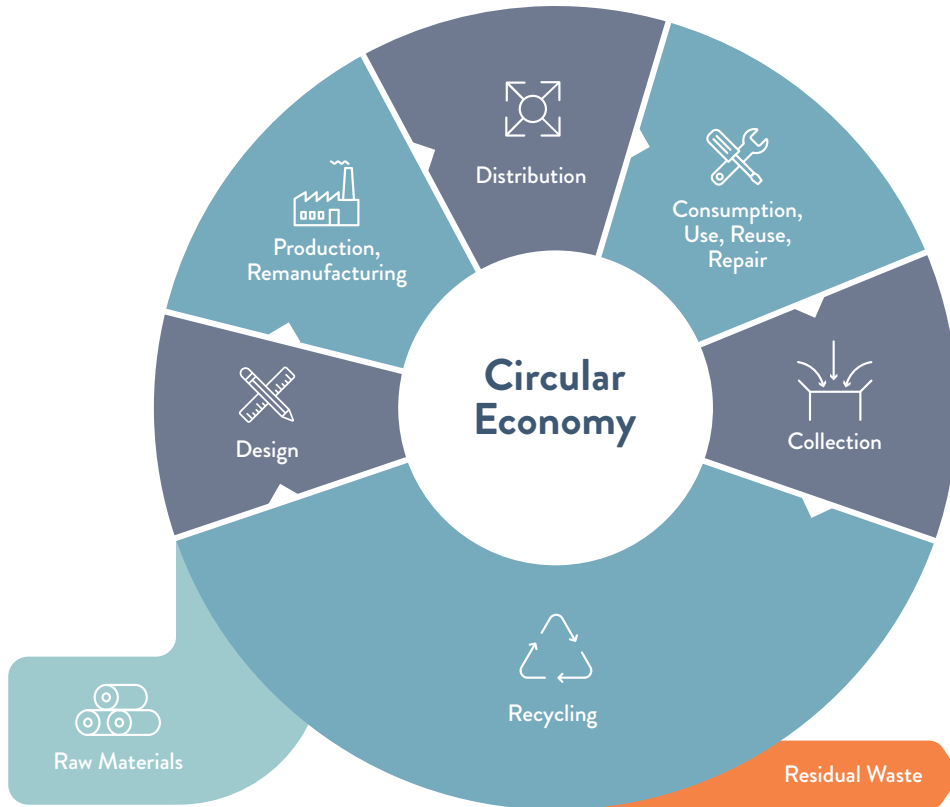


Fig. 9.1 The Circular Economy Source: EPA Circular Economy Programme 2021-2027

Galway City is part of the Connacht-Ulster Waste Region which is responsible for the preparation of a regional Waste Management Plan. This is a statutory document underpinned by national and EU legislation. The current *Connacht Ulster Regional Waste Plan 2015-2021* is still in force and has targets to reduce the quantities of household waste generated by 1% per annum, increase municipal waste recycling to 50% and eliminate the direct disposal of unprocessed residual waste to landfill, in favour of higher value pre-treatment processes and indigenous recovery practices.

A new National Waste Management Plan for a Circular Economy is currently being prepared and is due for adoption in early 2022. It will replace the existing Regional Waste Management Plans. It will contain targets for reuse, repair, resource consumption and reducing contamination levels of recyclable materials.

With regard to construction and demolition waste, there are opportunities to minimise disposal to landfill through reduction, re-use and recycling. Waste management and disposal should be carefully considered as part of the construction process and waste management plans will be required for medium to large scale developments.

Litter Management

The Council works with local business and communities to keep the city litter free and is responsible for co-ordinating and supporting a number of local litter prevention initiatives including the An Taisce National Spring Clean, beach cleans and 'Ditch the Disposables' aimed at reducing the use of disposable coffee cups in the city. This is guided by the Galway City Council Litter Management Plan 2018-2022 which aims to prevent and control the generation of litter, enforce litter legislation and support behavioural change by raising public awareness of the negative impact of littering. The proactive management of litter is crucial to maintaining the cleanliness of the city and a healthy environment.

Every household and business in the city is required to segregate their waste and ensure its disposal through an authorised waste collector in accordance with the Galway City Council (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws, 2019. Galway City Council supports the proper disposal of waste through the bulky goods collection service and operation of the Liosbán Recycling Centre which accepts waste that cannot be disposed of in household bins. It also manages city wide bring bank recycling facilities.

Policy 9.8 Waste Management

1. Secure the provision of waste management facilities and infrastructure with appropriate provision for minimisation, recovery and recycling of waste and regulate waste operations in a manner which reflects the 'polluter pays' and 'proximity' principles with particular emphasis on large waste producers, in accordance with the objectives of the Connacht Ulster Regional Waste Plan 2015-2021, except in relation to incineration and emerging legislation on the transition to a circular economy and the National Waste Action Plan for a Circular Economy 2020-2025.
2. Have a waste management system in the city in line with EU and national policies, which prioritises waste prevention, minimisation, recycling and reuse and accords with the outcomes of the Circular Economy Bill 2021 and the associated strategy.
3. Support the objectives and targets of the Connacht Ulster Regional Waste Plan 2015-2021 relating to Galway City and any subsequent Waste Plans.
4. Ensure that adequate recycling facilities and bring facilities are provided within the city, including where those are required in association with the layouts of new residential, industrial and commercial developments and where they comply with the requirements of the Environment Section of the Council.
5. Ensure the sustainable siting of waste facilities in relation to existing and potential surrounding land-uses, transportation and environmental considerations.
6. Promote the implementation of the City Council Litter Management Plan and other litter management initiatives in order to minimise and control the extent of litter pollution in the city.
7. Ensure that development on contaminated lands include appropriate remediation measures.

9.11 Telecommunications

The availability of a high quality, efficient telecommunications network is an essential enabler of social and economic activity in the city. The continued development of telecommunications and digital infrastructure is critical to the ongoing development of the knowledge economy, digital innovation, the development of digital enterprises and to ensure the security of systems. Galway City's digital infrastructure was categorised as 'developed/highly developed' by the Digital Readiness Assessment carried in 2018, however it will require continued investment to keep pace with the transition to a digital society and Smart City. Galway City Council is committed to supporting the delivery of world class communications infrastructure and the implementation of the Digital Strategy for Galway City (2020-2024), once adopted.

The roll out of the National Broadband Plan is a key focus of the NPF and RSES recognising its importance for enterprise, employment, innovation and education. It is an important part of the city's infrastructure and the Council will continue to facilitate improvements. Within the city, the Galway Metropolitan Area Network (MANs) supports high speed network connections and can deliver high quality bandwidth to the areas it serves. Public Wi-Fi zones have also been rolled out in the City Centre improving digital connectivity for all.

The continued development of broadband and hyper-connectivity measures includes proposed sub-sea links from Galway City to Iceland and Europe. These sub-sea fibre optic cable systems will provide high speed strategic international telecommunications connectivity, offering the potential for the city and wider region to become a key telecommunications and data gateway.

The advantages of a high-quality telecommunications network must, however, be balanced against the need to safeguard the environment and amenity of the city, particularly in sensitive areas where the impacts on residential amenity and visual amenity of areas will be required to be adequately assessed. The Council will have regard to the guidelines issued by the Department of Telecommunications Antennae and Support Structures (DECLG, 1996) and Circular Letter PL07/12.

9.12 A Smart City

Galway City Council, in partnership with relevant stakeholders is committed to support the development of Galway as a Smart City that makes best use of digital technology to deliver efficient services to citizens and businesses. Investment in world class communications infrastructure including high speed broadband and a sensor network known as the Internet of Things (IoT) will allow the development of smart systems networks that will provide real time information to develop smart city solutions. All Smart City initiatives will be underpinned by robust data and privacy standards. This aligns with the RSES ambition to develop the North West as a Smart Region and builds upon the Smart Atlantic Way initiative.

Smart City initiatives are already in place in the city including in traffic management, providing real time information to the public and managing traffic flows at signalised junctions. In waste management, smart solar compactor bins with higher capacity and reduced collection cycles are located throughout the city centre. There are a host of other small scale projects which collect footfall, air quality, noise and traffic-management data which support monitoring and decision making. Galway City is part of an All-Ireland Smart Cities Forum which includes Cork, Dublin, Limerick, Waterford, Belfast and Derry / Londonderry. This Forum works collectively to promote the adoption of smart solutions for urban challenges. The Council will continue to work in partnership with key stakeholders including the Insight Centre for Data Analytics at NUI Galway and the Regional Assembly to further the development of secure smart solutions for the city.

Policy 9.9 Telecommunications and Smart Technology

1. Support the development and expansion of telecommunication infrastructure (including the broadband network) within the city where appropriate, subject to environmental, visual and residential amenity considerations.
2. Ensure that developers of masts facilitate the co-location of antennae with other operators in order to avoid an unnecessary proliferation of masts. Where this is not possible operators will be encouraged to co-locate so that masts and antennae may be clustered.
3. Ensure that development for telecommunication and mobile phone installations take cognisance of the Planning Guidelines for Telecommunications Antennae and Support (DECLG, Circular Letter PL07/12) and in relation specifically to new free standing masts and antennae, locations in the immediate proximity to residential areas, schools and other community facilities will only be considered where all other more suitable options, including opportunities to locate on tall buildings, rooftops and co-location with existing masts, have been exhausted following an evidenced based evaluation of potential sites.
4. Facilitate the rollout of digital infrastructure to implement a world class digital infrastructure and sensor network that will provide real time data and smart city solutions.
5. Support the actions of the draft Galway City Digital Strategy (2020-2024).

9.13 Energy and Associated Infrastructure

The provision of secure, reliable and efficient energy transmission supply and infrastructure is of critical importance to the continuing economic, social and cultural development of the city and its ability to attract investment and sustain existing enterprise. It is also critical to facilitating the decarbonisation of our energy systems and the transition to a low carbon economy. In this regard, the Council will support the future requirements of the major energy service providers such as EirGrid, the ESB and Bord Gáis Energy. National energy policy, set out in the *White Paper Ireland's Transition to a Low Carbon Energy Future 2015-2030* is focused on three core objectives - sustainability, security of supply and competitiveness. It is closely aligned with climate change objectives supporting the shift away from fossil fuel to alternative, low carbon energy. Demand for energy in Ireland over the next 10 years is projected to grow by between 19% and 50%. This coupled with the shift to renewable energy and the decommissioning of fossil fuel power generation plants will pose significant challenges and will require investment in improvement and flexibility of the energy transmission distribution networks to facilitate the shift to renewable energy sources.



EirGrid is responsible for power across the electricity transmission grid, ensuring a safe, secure and reliable supply of electricity for all. Its *Strategy 2020-2025 Transform the Power System for future generations* is focussed on climate change and the transformation of the electricity sector. It is currently planning for the transition to low carbon and renewable energy to enable the supply of 70% of Ireland's electricity from renewable sources by 2030. Eirgrid will publish *Shaping Our Electricity Future Roadmap* in late 2021 which will outline the preferred approach to achieving this target while maintaining affordability and delivering system reliability and security of supply. The Council will support the infrastructural renewal and development of energy networks in accordance with *Shaping Our Electricity Future Roadmap* recognising the need to increase electrical infrastructure, capacity and security. Balanced consideration will be given to the development of necessary energy transmission infrastructure serving the city's energy needs and the avoidance of unduly negative effects on the environment and the community.

Renewable Energy

Ireland is committed to generating 70% (or an additional 12 GW) of its electricity requirements from renewable energy by 2030. In order to meet the increased demand for renewable electricity the government through the Renewable Electricity Support Scheme (RESS) is committed to increasing capacity across a number of sectors by 2030 including offshore wind and renewable energy, onshore wind and solar.

The RSES identifies the huge potential for off-shore wind energy as a considerable resource to be explored and the need for adequate provision of land based infrastructure and services. In particular, the Port of Galway is ideally placed to support the offshore renewable energy sector. This would complement their current role in supporting special project related imports including infrastructure for windfarms in the region.

Support is also in place through changes to the electricity market to enable micro-generation, where small scale domestic electricity customers produce their own electricity through photovoltaic panels, wind turbines or combined heat and power schemes and export any excess to the electricity grid.

The Council supports the increase in use of renewable energy sources in the city. There is potential for small-scale renewable energy developments within urban and industrial areas of the city where visual and residential amenities are safeguarded and there are no adverse environmental impacts. Exemptions from planning permission are provided for the installation of micro scale renewable energy infrastructure in domestic dwellings, business premises and industrial settings including solar panels, heat pumps, wind turbines and combined heat and power systems. Consideration will also be given to the potential for developing hydroelectric energy schemes, potentially located on the Eglinton Canal.

The Council has recently commissioned an Energy Master Plan for Galway City which will include a greenhouse gas baseline emissions inventory (BEI) and provide a register of opportunities for decarbonising projects including energy retrofitting of residential and non-residential buildings, a roadmap for electrification of the heat and transport systems and the identification of viable renewable energy and energy storage projects to target opportunities to achieve the 51% reduction in greenhouse gas emissions required nationally by 2030.

Policy 9.10 Energy and Associated Infrastructure

1. Support the infrastructural renewal and strategic development of the national transmission grid system and energy networks in the city, underground where at all possible, including the overhead high voltage lines necessary to provide the required networks in accordance with the Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure 2012.
2. Support the deliver a sustainable electricity system and ensure transition to a low-carbon economy in accordance with ambitions for decarbonisation of the energy sector.
3. Ensure that the infrastructural renewal and development of energy networks avoid negative impacts on European sites and adhere to the requirements of Article 6 of the Habitats Directive (92/43 EEC).