



**Comhairle Cathrach
na Gaillimhe**
Galway City Council

STRATEGIC ENVIRONMENTAL ASSESSMENT NON-
TECHNICAL SUMMARY OF ENVIRONMENTAL REPORT
FOR THE GALWAY CITY CLIMATE ACTION PLAN 2024 -
2029

PREPARED FOR GALWAY CITY COUNCIL UNDER SI 435
OF 2004 AS AMENDED

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1 Non Technical Summary

An Environmental Report has been prepared as part of the Strategic Environmental Assessment of the Galway City Climate Action Plan 2024-2029. This is the Non-Technical Summary of this report.

1.1 Background

Through the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland is now on a legally binding path to net-Zero emissions no later than 2050, and to a 51% reduction in emissions by the end of this decade. The Act provides the framework for Ireland to meet its international and EU climate commitments and to become a leader in addressing climate change. As required by the 2021 Act, Galway City Council is preparing their first Local Authority Climate Action Plan (LA-CAP) which must be adopted by the Elected Members before 23rd February 2024. This will continue the work undertaken over the first Climate Change Action Plan 2019-2024 which was non statutory.

1.2 Outline of the CAP

The plan will cover all of the functional area of Galway City. **Figure 1.1** shows the location of Galway City, and the Atlantic Seaboard North Climate Action Regional office extent (CARO).

The principal themes are identified and these are supported by actions. These themes include:

- Governance and Leadership
- Energy and Built Environment
- Communities Resiliency and Transition
- Environment and Biodiversity
- Transport and Mobility
- Sustainability and Resource Management

Galway City Council will use its CAP in planning how it will reduce greenhouse gas emissions from across its own assets and infrastructure, whilst also taking on a broader role to influence, facilitate and co-ordinate the climate actions of communities and other stakeholders and what it will do to advocate for climate action in Galway city. In order to ensure that the CAP is centred around a strong understanding of the role and remit of Galway City Council on climate action, the Plan is being developed through the following framework.

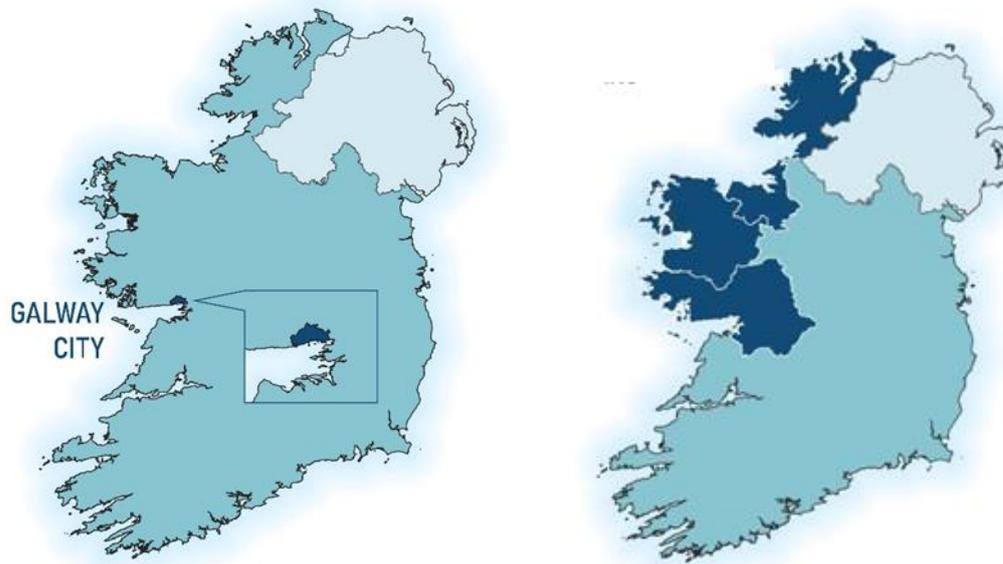
- Full accountable: Targeted actions for areas where Galway City Council has full accountability for climate action within their own operations.
- Influence: Actions for where Galway City Council can influence businesses, communities, and individuals in the delivery of local climate action through the functions and services they provide.
- Coordination: Actions for where Galway City Council can coordinate and facilitate local and community action bringing together stakeholders in partnership to achieve climate action related projects.
- Advocate: Actions aligned to Galway City Council role as advocate on climate action through raising awareness, communicating, informing, and engaging in open dialogue on the topic.

While the Climate Action Plan will be ambitious to reflect the leadership role of Galway City Council on climate action, the Plan will not include actions whereby their implementation and achievement fall outside our role, remit, and governance.

The Plan will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment,

Ecological Impact Assessment and requirements as appropriate) that form the statutory decision-making and consent granting. Actions arising from the plan will demonstrate compliance with the environmental protection measures in the Galway City Development Plan 2023 -2029, and SEA Environmental Report and Natura Impact Report that accompanies same.

Figure 1-1 Galway City and the CARO Atlantic Seaboard North



1.3 Steps in the SEA Process

The steps involved in SEA are as follows:

- Screening (determining whether or not SEA is required).
- Scoping (determining the range of environmental issues to be covered by the SEA).
- *The preparation of an Environmental Report (current stage)*
- The carrying out of consultations.
- The integration of environmental considerations into the Plan or Programme.
- The publication of information on the decision (SEA Statement).

1.4 Consultation on scoping stage

Submissions received at scoping stage have all informed the scope of this SEA.

1.4.1 Decarbonising zone

A Decarbonisation Zone (DZ) is a spatial area identified by the local authority in which a range of climate mitigation, adaptation and biodiversity measures and action owners are identified to address local low carbon energy, greenhouse gas emissions, and climate needs to contribute to national climate action targets. ’

In accordance with Action 165 of the National Climate Action Plan 2019, each local authority was required to ‘identify and develop plans for one Decarbonising Zone’ within their respective administrative area. An Action Plan for the DZs must be included in the Local Authority Climate Action Plans (LA CAP) as identified in the LACAP guidelines. As a component of the LACAP, the DZ is subject to the same statutory processes, timeframes, and other procedural requirements of making the LA Climate Action Plan. The DZs are a demonstration and test bed to focus on a range of climate

mitigation, adaptation and biodiversity measures including the identification of projects and outcomes to assist in the delivery of the National Climate Objective.

GCC has selected the “Westside” area as the DZ, for the inclusion in a focused Implementation Plan for decarbonisation and complementary sustainability measures. The selection of the DZ was based on selection criteria which included themes such as transport/active travel, the built environment, green spaces, demographics, air quality, community, social infrastructure and energy use. The “Westside” area emerged as the preferred DZ as result of an assessment using these themes, in addition to the existence of several strong partners such as University of Galway, and the Galway Energy Co-Operative Sustainable Energy Community. The area covered comprises 167ha and encompasses a variety of public buildings, community facilities, commercial units and educational buildings. The wide variety of services within the DZ make it a useful location to act as a test bed of focused decarbonisation measures. The population figure within the DZ is supplied by GCC as being 5,541 (in 2021) covering two Electoral Divisions (ED’s) and 22 small areas.

1.5 Relationship to other plans and programmes

It is a requirement of the SEA to review and assess how the draft CAP may interact with other plans and programmes; this review was undertaken as part of the SEA and please see Chapter 3 of the SEA ER. Arising from the review, the following Table 1 highlights key implications from this review and how it relates to the UN sustainable development goals and the EPA State of Ireland’s Environment (2020). The Strategic Environmental Objectives in the table below are used in the SEA process to assist in the assessment and identification of significant environmental effects.

TABLE 1-STRATEGIC ENVIRONMENTAL OBJECTIVES AND LINKS TO EPA STATE OF IRELAND’S ENVIRONMENT AND SUSTAINABLE DEVELOPMENT GOALS

SEA Topic	Principles for the CAP and SEA	EPA Irelands Environment 2020 Key Messages	United Nations Sustainable Development Goals
Air Quality and Climate	<p><i>Support the delivery of all national climate policy as appropriate to the city with the prioritisation and acceleration of evidence-based measures</i></p> <p>Promote climate adaption and mitigation measures in line with the Galway City Climate Change Adaption Strategy and any future plans.</p> <p>Enable sustainable development by encouraging new and existing development to reduce carbon emissions and build climate resilience.</p> <p>Improve air quality within the city</p> <p>Comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG, 2009).</p>	<p>SOE3 Health and Wellbeing</p> <p>SOE5 Air Quality</p> <p>SOE4 Climate</p> <p>SOE6 Nature</p> <p>SOE 8 Marine</p> <p>SOE9 Clean Energy</p> <p>SOE 11 Water Services</p> <p>SOE12 Circular Economy</p> <p>SOE13 Landuse</p>	<p>SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation</p> <p>SDG 12. Ensure sustainable consumption and production patterns</p> <p>SDG13. Take urgent action to combat climate change and its impacts.</p>
Biodiversity, Flora and Fauna	<p>Protect, conserve and promote the enhancement of habitats, species and their sustaining resources in international and national designated sites and prevent adverse impacts (direct, cumulative and indirect) from development within or adjacent to these sites.</p> <p>Protect and conserve rare and threatened habitats and species, including those listed in the Habitats Directive and the Wildlife Acts.</p> <p>Protect and conserve the marine environment and promote the appropriate sustainable management of the coastal zone taking cognisance of potential direct, indirect and cumulative impacts on European sites.</p>	<p>SOE 4 Climate</p> <p>SOE 5 Air Quality</p> <p>SOE 6 Nature</p> <p>SEO 8 Marine</p> <p>SOE 11 Water Services</p> <p>SEO 12 Circular Economy</p> <p>SOE 13 Land use</p>	<p>SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> <p>SDG 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>

SEA Topic	Principles for the CAP and SEA	EPA Ireland's Environment 2020 Key Messages	United Nations Sustainable Development Goals
	<p>Support measures to control and manage alien/invasive species.</p> <p>Protect areas of local biodiversity value and stepping stones which provide connectivity for species and prevent wildlife habitat fragmentation that contributes <i>towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure</i>¹</p> <p>Promote ecological awareness and biodiversity.</p> <p>Avoid and minimise habitat fragmentation and seek opportunities to improve habitat connectivity that moves</p>		
<p>Population, Human Health, Noise</p>	<p><i>Safeguard the Galway's citizens from environment-related pressures and risks to health and well-being including air, water and noise pollution, climate change and flooding.</i></p> <p>Promote good quality of life based on high-quality residential, working and recreational environments and on sustainable travel patterns, land uses, including potential adverse noise quality impacts.</p> <p>Promote social inclusion and wellbeing/healthy living in the city.</p> <p>Minimise noise, vibration and emissions from traffic and minimise impact on residential amenities.</p>	<p>SOE3 Health and Wellbeing SOE4 Climate SOE5 Air Quality SOE 11 Water Services SOE 12 Circular Economy SOE13 Landuse</p>	<p>SDG 3. Ensure healthy lives and promote wellbeing for all at all ages.</p> <p>SDG 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</p> <p>SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.</p> <p>SDG 11. Make cities and human settlements inclusive, safe, resilient and sustainable.</p>

¹ Amended following SEA Scoping Submission by Dept of Housing, Heritage and Local Government

SEA Topic	Principles for the CAP and SEA	EPA Irelands Environment 2020 Key Messages	United Nations Sustainable Development Goals
Water	<p>Maintain and improve, where possible, the quality of surface water, rivers, lakes and groundwater to meet the requirements of the National River Basin Management Plan.</p> <p>Maintain and improve, where possible, the quality of transitional and coastal waters, and to prevent the contamination of bathing water.</p> <p>Support the maintenance and improvement of drinking water supplies.</p> <p>Support the promotion of water conservation.</p> <p>Progressively reduce discharges of polluting substances to waters.</p>	<p>SOE3 Health and Wellbeing</p> <p>SOE5 Air Quality</p> <p>SOE4 Climate</p> <p>SOE6 Nature</p> <p>SOE 11 Water Services</p> <p>SOE13 Landuse</p>	<p>SDG 6. Ensure availability and sustainable management of water and sanitation for everyone</p> <p>SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>
Soil and Geology	<p>Maintain the quality of soils.</p> <p>Maximise the sustainable re- use of brownfield lands, and the existing built environment.</p> <p>Minimise the consumption of non-renewable sand, gravel and rock deposits.</p> <p>Protect and conserve important and audited geological heritage sites</p>	<p>SOE4 Climate</p> <p>SOE6 Nature</p> <p>SOE 11 Water Services</p> <p>SOE 12 Water Services</p> <p>SOE13 Landuse</p>	<p>SDG12. Ensure sustainable consumption and production patterns.</p> <p>SDG 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</p>
Material Assets	<p>Maximise use of the built environment in a sustainable and efficient manner.</p> <p>Maximise and support sustainable modes of transport.</p> <p>Ensure water and wastewater are planned for and provided as critical services infrastructure</p> <p>Facilitate measures to reduce all forms of air pollution.</p>	<p>SEO3 Health and Wellbeing</p> <p>SOE 5 Air Quality</p> <p>SOE 8 Marine</p> <p>SOE9 Clean Energy SOE 13 Land use</p> <p>SOE 11 Water Services</p> <p>SOE 12 Circular Economy</p>	<p>SDG 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p> <p>SDG 12. Ensure sustainable consumption and production patterns</p> <p>SDG 13. Take urgent action to combat climate change and its impacts</p>
Cultural Heritage	<p><i>To support adaptive re-use of existing uninhabited and derelict structures where possible opposed to demolition and new build (to promote sustainability and reduce landfill).</i></p>	<p>SOE3 Health and Wellbeing</p> <p>SOE 12 Circular Economy</p>	<p>SDG 11. Make cities and human settlements inclusive, safe, resilient and sustainable.</p> <p>SDG16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for</p>

SEA Topic	Principles for the CAP and SEA	EPA Irelands Environment 2020 Key Messages	United Nations Sustainable Development Goals
	Promote the protection and conservation of the city's cultural, built archaeological and linguistic heritage, and where appropriate enhance character.	SOE13 Landuse	all and build effective, accountable and inclusive institutions at all levels
Landscape	Conserve and enhance the built heritage and landscape features of the city. <i>Support landscape scale responses to climate change adaptation and mitigation</i>	SOE3 Health and Wellbeing SOE 4 Climate SOE 5 Air Quality SOE 6 Nature SEO 8 Marine SOE 11 Water Services SOE 12 Circular Economy SOE 13 Land use	SDG 11. Make cities and human settlements inclusive, safe, resilient and sustainable. SDG 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Inter-relationships	Maintain and improve the health of people, ecosystems and natural processes Actively seek to integrate opportunities for environmental enhancement.	SOE3 Health and Wellbeing SOE 4 Climate SOE5 Air Quality SOE6 Nature SOE7 Water Services SOE 8 Marine SOE9 Clean Energy SOE 11 Water Services SOE12 Circular Economy SOE13 Landuse	All SDGs

2 Describing the current environment

Baseline data has been gathered to present information on the current environment within the area. The Baseline section describes the following:

- Green and Blue network, ecosystem services.
- Biodiversity, Flora and Fauna
- Population and Human Health
- Soil and Geology
- Water Resources including flooding
- Air Quality and Climate
- Cultural Heritage
- Landscape
- Material Assets, and the
- Interaction between the above topics. These are summarised below:

2.1.1 Green and blue network, ecosystem services

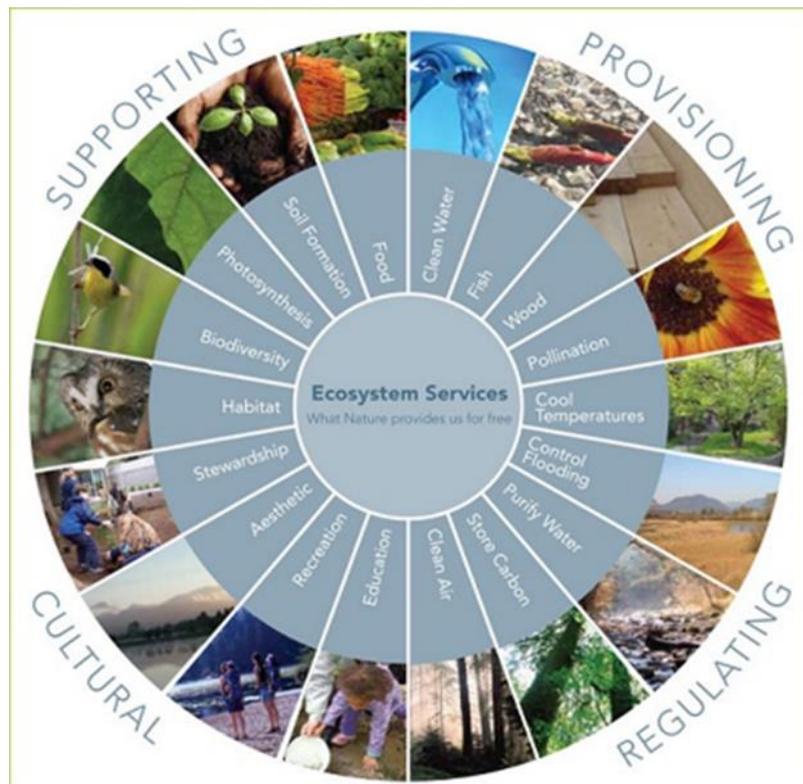
Green Infrastructure is defined as *'an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations'* (Comhar, 2010). Such spaces include woodlands, coastlines, flood plains, hedgerows, fields, gardens, turloughs, lakes, city parks and street trees, and the benefits to humans they provide include water purification, flood control, carbon capture, food production and recreation. Incorporation of green infrastructure in spatial planning and sectoral decision making helps to prevent biodiversity loss and fragmentation of ecosystems, thus restoring, maintaining and enhancing ecosystems and their services. It will improve resilience and adaptation to climate change and enable greater connectivity between ecosystems in protected areas and the wider countryside. There are many inter-relationships between green-infrastructure and other environmental parameters, for instance, its integration with human health through sport and recreation opportunities as well as increasing accessibility to amenity and recreation areas and promoting social inclusion; natural heritage and cultural heritage. Galway is rich in biodiversity and developing the connectivity between existing ecological corridors offers great potential in the Plan area for biodiversity and increasing resilience to climate change effects.

Ecosystem services are the benefits that flow from nature to people. They can be provisioning (e.g. the supply of food, clean air and water and materials), regulating (e.g. water and climate regulation, nutrient cycling, pollination, or the formation of fertile soils), or cultural (e.g. recreation opportunities, or the inspiration we draw from nature). Natural ecosystems are multifunctional – they can provide a wide range of services simultaneously. The range and flow of these benefits depends largely on biodiversity and ecosystem condition.

A network of healthy ecosystems often provides cost-effective alternatives to traditional 'grey' infrastructure, offering benefits for EU citizens and biodiversity. This is why the EU promotes the use of nature-based green and blue infrastructure solutions². See Figure 2.1 below for ecosystem services provision.

² https://ec.europa.eu/environment/nature/ecosystems/index_en.htm

FIGURE 2-1 ECOSYSTEM SERVICES



2.1.2 Biodiversity, Flora and Fauna

The Plan area is rich in biodiversity, with many significant protected habitats and species including coastal habitats and terrestrial habitats supporting a range of species and flora including otters, bats, wildfowl, salmon, lamprey and otter amongst others. Other habitats, although not protected are important for providing links between the protected habitats, allow migration, dispersal and genetic exchange of wild plants and mammals. Examples include scrub, hedgerows, tree lines, roadside verges, housing estate open spaces and gardens. Natural heritage in the plan area includes a wide range of natural features that make an essential contribution to the environmental quality, ecological biodiversity, climate resilience through nature-based solutions landscape character, visual amenity and recreational activities of the city. The Council also supports the All-Ireland Pollinator Plan which aims to help pollinators by improving biodiversity.

2.1.3 Population and human health

Census 2022 data shows a population for the Galway City and suburbs of 85,910 persons. The city is projected to grow an additional 30% of its current population in 2026, and therefore will necessitate an examination of the impacts on population dynamics, human health and quality of life on Galway City residents. Population projections and housing demands are expected to exceed the estimates that have been suggested by ESRI. A key challenge for the city is providing sufficient housing options across all tenures in sustainable neighbourhoods, housing choice and affordability, and social inclusion (in support of people with disabilities, the Traveller community and other ethnic minorities) to surmount barriers such as poverty that prevent people from engaging in education, culture and community activities that enhance quality of life.

Disadvantaged people are more likely to live in poor quality built environments and have limited access to transport and local amenities supporting healthy choices. This has further implications in

regard to climate change and adaptation and mitigation to climate change including transport options, green infrastructure, energy provision and efficiencies and air quality emissions. Poor air quality is a major health risk, causing lung diseases, cardiovascular diseases, and cancer. Health implications of poor air quality from transport impacts the lungs, liver & spleen³Children, the elderly and citizens suffering from asthma and respiratory conditions are most affected. As well as negative effects on health, air pollution has considerable economic impacts; cutting short lives, increasing medical costs, and reducing productivity through lost working days. Other environmental resources interact with human health and include material assets (wastewater and water services, energy, transport) , and water quality as well as access to green and blue space.

2.1.4 Geology and Soil

The majority of the soils for Galway City and suburbs are classified as “Made”, which have been distributed, transported or manipulated by urban activities. There are patches of Alluvial soils dispersed across the eastern side of the city. Vulnerable soils within the plan area are found primarily along the River Corrib. Lands to the west with granitic rocks are divided by the N59 from lands to the east with limestone. As granitic rocks are acidic and poorly drained, whilst limestone rocks are alkaline, the potential for contamination of water resources is higher. Given the urban character and historical landuse activities particularly in the city centre and harbour area, soil contamination may have occurred in brownfield lands.

2.1.5 Water resources including flooding

The main catchment in the plan area is the Corrib Catchment (Code: 30), covering approximately 3113.28sq km. This includes the area drained by the River Corrib and all streams entering tidal water between Renmore Point and Nimmo’s Pier (Galway). The total population of the catchment is approximately 116,866 with a population density of 38 people per km². This catchment is characterised by a wide, flat, limestone plain occupying the eastern two-thirds of the catchment which terminates in the large lakes of Corrib and Mask that abut against the igneous granites of Galway and the metamorphic uplands of southwest Mayo. The entire area of this catchment east of the large lakes is karstified and groundwater and surface water are highly interconnected in this region. With climate change there are increased extreme weather events that contribute to flooding across a range of sources.

2.1.6 Air Quality and Climatic Factors

Poor air quality leads to more than 1300 premature deaths each year in Ireland. Ireland’s two main pollutants of concern are: Fine particulate matter (PM2.5), where the dominant source is residential solid fuel burning. Nitrogen dioxide (NO₂), where the dominant source is transport.

2.1.7 Climate Factors

Ireland must invest in structural and behavioural change to enable the transition to a climate neutral, climate-resilient country. These changes include the rapid decarbonisation of energy and transport and the adoption of sustainable food production, management and consumption systems. In December 2022, the government published Climate Action Plan 2023 (CAP23). It is the first updated plan since the introduction of the Climate Action and Low Carbon Development (Amendment) Act 2021. CAP23 aims to keep Ireland’s emissions within its mandatory carbon budget and achieve the legally binding target of reducing emissions by 51% (from a 2018 baseline) by 2030.

Sectoral emissions ceilings refer to the total amount of greenhouse gas emissions that each sector of the economy is allowed to produce during a specific time period. In Ireland the sectoral emissions

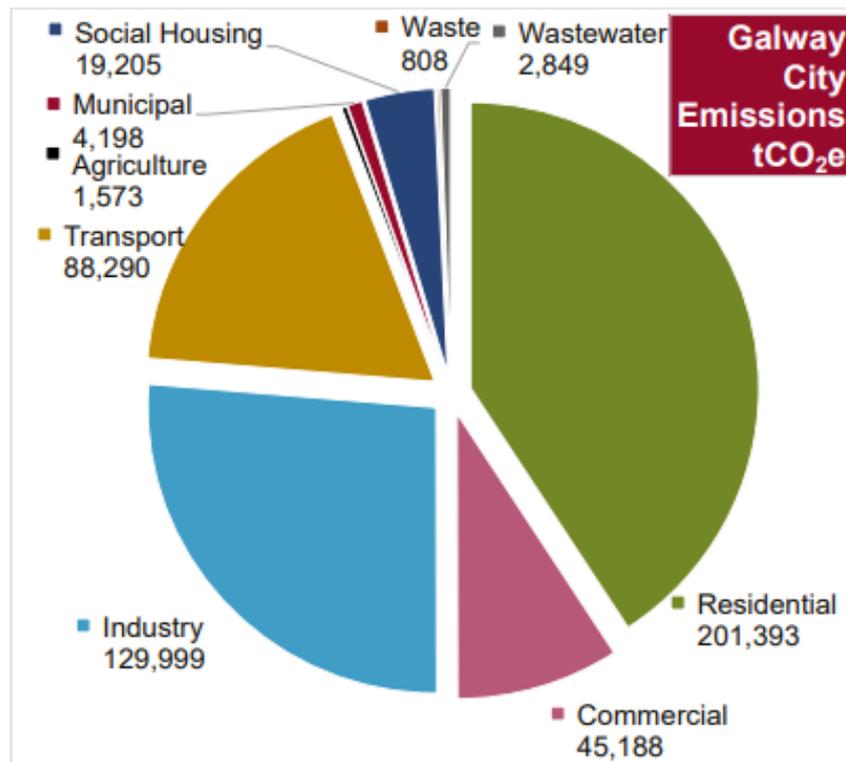
³ Life Emerald 2023.

ceilings set out the maximum emissions that are permitted from each sector to ensure that Ireland remains within its carbon budgets. These sectors are:

- Electricity
- Transport
- Built Environment (Residential, Commercial & Public Sector)
- Industry & Other
- Agriculture
- Land Use, Land Use Change and Forestry (LULUCF)

Figure 2.2 provides a summary of Galway City emissions.

FIGURE 2-2 GALWAY CITY EMISSIONS



2.1.8 Material Assets

Access to an efficient transport network contributes to opportunities for all sectors of the population to access services, facilities and social networks that are necessary to meet daily needs. Ease of accessibility enhances quality of life, promotes social inclusion, presents opportunities, and promotes human health through expansion of cycle and walking infrastructure.

The Circular economy relates to a transition from carbon heavy, linear resource use. Circular economy systems:

- keep the added value in products for as long as possible and aim to eliminate waste.
- keep resources within the economy when a product has reached the end of its life, so that they can be productively used again and again and hence create further value.

2.1.9 Cultural heritage including archaeology and built heritage.

Galway City has a rich archaeological heritage. Given its historic character, Galway City centre is identified as a Zone of Archaeological Notification, and there are many archaeological sites throughout the plan area, notably clustered around the historic core. Underwater archaeology is also a significant feature of cultural heritage and is associated with the coast, tidal areas and rivers/lakes. Lakes, rivers, estuaries, coastal and transitional waters within and surrounding the area to which the Plan relates, may contain many features and finds associated with maritime/riverine heritage such as

shipwrecks, piers, quay walls, fords, stepping stones and associated archaeological objects and features.

There are approximately 600 structures in the Record of Protected Structures in the plan area, examples of which include St. Nicholas' Church, the lighthouse at Mutton Island, the timber sculpture at the Salmon Weir Bridge and the King George V post box at Courthouse Square⁴.

2.1.10 Landscape and seascape

The plan area encompasses the urban, built environment as well as open space, river, canal system and coastline. Other important elements of the city's landscape include views and prospects of amenity value, trees and the historic built environment. Inland waterways are a feature of the city, including the River Corrib, Eglington Canal, the Terryland River, lesser waterways of the Cathedral River, the West River and other headraces, tailraces and minor canals. The River Corrib is flanked by inland marshes along Dyke Road. Lough Atalia is classified as a coastal lagoon. Fringes of the plan area turning inland are a mix of pastures, green urban areas and land principally occupied by agriculture.

The Galway City Public Realm Strategy (2019), accompanied by its design, activity and delivery manuals is an important document that appraises the existing urban form including urban design, characterization, spaces and landmarks. The basis of the Strategy is formed by the uniqueness of Galway City, and it aims to making Galway more inclusive, accessible, and create greener, more quality public spaces. The strategy includes the typology of streets and public spaces and project proposals to improve the quality of Galway's city centre, streets, and public spaces. This is an important baseline description of the plan area and informs the public realm and masterplanning proposals and opportunities in the future. The promotion of compact growth equally relies upon good urban design and an attractive public realm.

2.1.11 Evolution of the plan area in the absence of the Climate Action Plan

The SEA legislation requires that consideration is given to the likely evolution of the current baseline where implementation of the CAP 2024-2029 does not take place. In the absence of the CAP the environment would evolve under the requirements of the current Galway City Development Plan 2023-2029.

Overall, this Climate Action Plan will be monitored and updated on an annual basis, with a review and revision every five years. Whilst the CDP-2023 -2027 will remain the primary landuse framework for the plan area of the city, in the absence of the CAP, the detailed actions accompanied by targets and indicators will not allow for the annual measuring of progress in this area. This presents a lost opportunity to implement changes at local authority, and community level across Galway City. Key actions relating to nature based solutions which offer a suite of positive environmental effects would not be implemented with subsequent opportunities lost to green up infrastructure, promote food security and enhance tree planting. Other actions such targeted energy efficiencies and risk assessment would be omitted.

At city level, the local authority would be less likely to contribute to continue to the reduction in carbon emissions associated with their fleet, lighting and buildings. Promoting regional or inter city actions relating to public transport, walking and cycling may be less effective in the absence of this action plan.

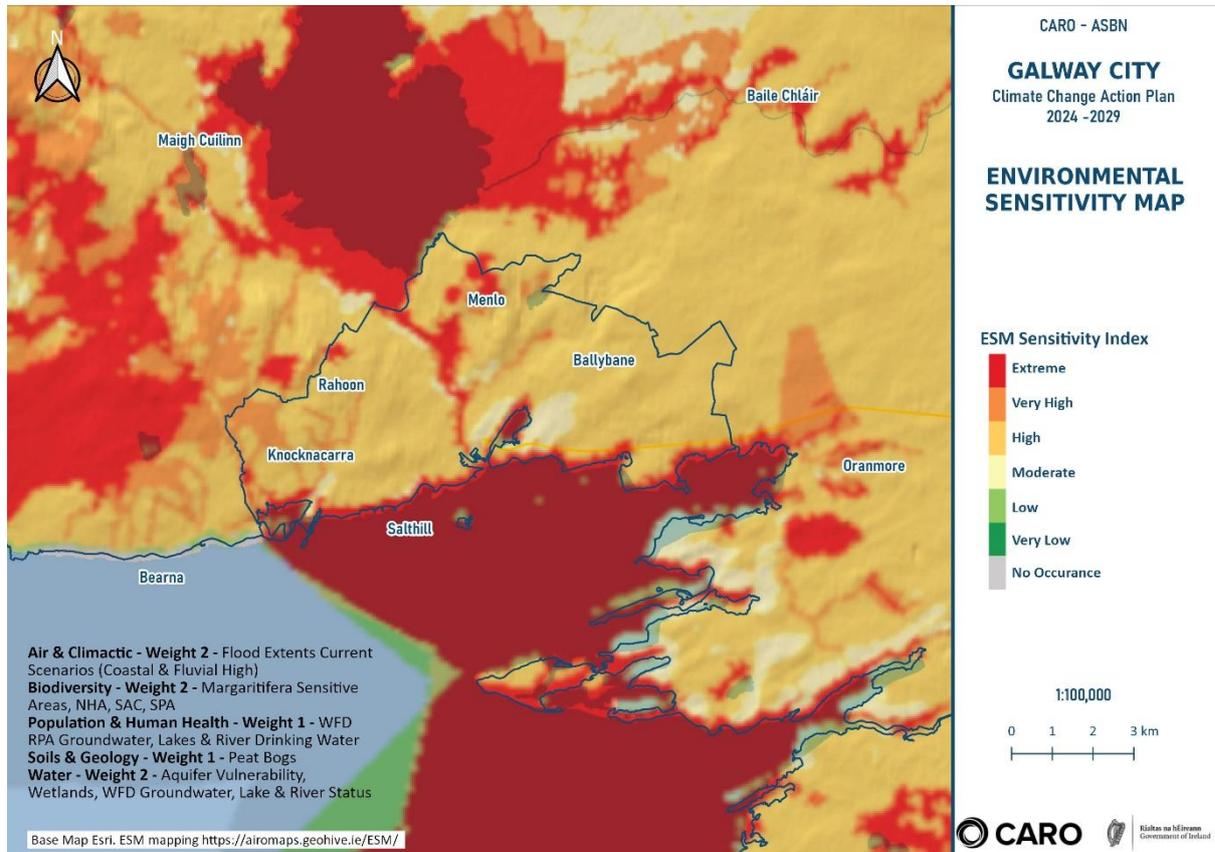
2.1.12 Inter-relationships

Environmental sensitivity mapping was prepared to inform the overall assessment of the CAP and to aggregate different environmental themes to help identify areas of greater and lesser environmental

⁴ GalwayCity - Heritage & Architectural Conservation

sensitivity. The key datasets used to inform this sensitivity mapping are shown in the ESM map in Figure 2.3

FIGURE 2-3 GALWAY CITY ENVIRONMENTAL SENSITIVITY MAP



3 Consideration of Alternatives

The SEA Directive requires that reasonable alternatives be assessed to demonstrate how the preferred strategy performs against other forms of action. Alternatives must be developed, described and assessed within the SEA process, with the results presented in the Environmental Report.

- Alternative 1 - Prioritise reducing GHG emissions from largest GHG emitting sectors in the City to mitigate against climate change impacts.
- Alternative 2 - Adopt a multi-pronged approach and focus on a range of priority areas to mitigate against and adapt to climate change impacts.
- Alternative 3 -: Adopt a multipronged approach - that has a strong community engagement emphasis - and focus on a range of priority areas to mitigate against and adapt to climate change impacts.

A 'Do Nothing' or 'Do Minimum' alternative is not a reasonable alternative in this instance as the preparation of an effective LACAP is a statutory requirement under Section 16 of the Climate Act. Following the evaluation and assessment of the alternatives above against the SEOs, the preferred strategic alternative for the approach to the CAP 2024 -2029 Alternative 3. This is based on the following:

In terms of all SEOs, Alternative 3 is identified as creating most positive interactions as it provides greater environmental performance overall and also allows for a greater environmental gain, than may be achieved through Alternatives 2 and 1. In addition, the multi- faceted approach contributes to greater co-benefits by providing for a wider range of environmental effects particularly around nature based solutions and resource management. The inclusion of measures for citizen engagement and awareness raising through the CAP option is also positive for a number of SEOs.

4 Assessment of significant environmental effects

A summary of the significant environmental effects is shown below in **Table 4.1** The SEA ER also considered in combination effects across other plans and programmes and within plan elements.

TABLE 4-1 SUMMARY OF SIGNIFICANT ENVIRONMENTAL EFFECTS

Topic	Discussion
Population and human health	<p>Many of the actions identified in the CAP give rise to medium to term positive effects on population and human health both by responding and adapting to the impacts of climate change, and also reducing greenhouse gas emissions through a series of measures.</p> <p>Reflecting the opportunity for co-benefits of the CAP, measures around energy efficiency and retrofitting plus renewable energy opportunities can help address fuel poverty in relation to vulnerable individuals as well as the support for projects that reduce energy and monitor and rectify consumption trends, for example: <i>DZ Action DZ 3 Energy efficiency upgrades for all low BER homes (below C1)</i></p> <p><i>Action 22: Implement opportunity projects outlined in "gap to target tool" which tracks energy and emission consumption reduction progress towards 2030 targets which inculcates growing energy demand and includes all action measures such as building retrofits, removal of fossil fuel heating systems, renewable energy systems, alternative fuel sources, electric vehicles and public lighting.</i></p> <p>Reflecting key objectives in the Galway CDP 2023-2029 such as <i>Sustainable Mobility and Transportation Policy 1. Develop a compact city, where sustainable land use and transportation are integrated and where there is choice and accessibility to a range of transport modes, with increasing support for a shift to more sustainable modes in line with national aims on climate action and where safety and ease of movement is provided to and within the City and onward to the wider area of the MASP, County Galway and the Northern and Western Region.</i></p> <p>The CAP will support and encourage a modal shift in transport by expanding the walking and cycling network, making walking and cycling safer and encouraging and promoting greater engagement and awareness raising in relation to walking and cycling and promoting behavioural change; for example see: <i>Action 47: Support the development of greater accessibility, modal shift and active travel throughout Galway City through implementation of work programmes and Galway Transport Strategy (GTS)</i> <i>Action 49 Support uptake of active travel across Galway City engaging with key stakeholders, community groups, institutions and schools through workshops, co-design and engagement to increase. Including delivery primary, secondary school and business cycle training programme.</i> <i>Action 50 Support and promote community mobility schemes including bike share schemes, mobility hubs, community EV carsharing and EV charging, carpooling, and community taxis.</i></p> <p>Interactions between active travel support in the CAP, and the Galway City DP and supporting strategies will support modal shifts, in terms of making walking and cycling safer and more attractive on daily basis.</p> <p>Addressing GHG emissions from the Transport and Residential sectors as the above actions do, have accompanying positive impacts in terms of local air quality and therefore on human health. In addition, the impact of particulate matter and other</p>

Topic	Discussion
	<p>airborne particles extend beyond human health to the entire terrestrial and aquatic environment (Tositti et al., 2018⁵).</p> <p>In the absence of mitigation, whilst the current Galway City DP 2023-2029 policies will apply, there could be adverse environmental effects around capacity building, training, embedding nature based solutions that can provide co benefits across many environmental resources, subject to robust assessment and design.</p> <p>These could result in localised and synergistic impacts on parameters including cultural heritage, landscape that may affect population and human health. Equally grey infrastructure measures particularly at sensitive locations such as coastal habitats can impact sense of place, landscape character, as well as cross cutting adverse effects such as coastal squeeze and longer term adverse effects on aquatic habitats and species reliant on same.</p> <p>Encouraging and accessing local knowledge and capacity is provided for within the CAP but additional recommendations are made in this regard, based on supporting nature based solutions, referencing recent EPA research on coastal resilience and communities (<i>new action recommended to strengthen alignment with the City Development Plan and supporting environmental assessments.</i>).</p>
Biodiversity, Flora and Fauna	<p>The promotion of a nature based measures and resource management in particular along with blue and green infrastructure actions all strengthen overall protection of biodiversity resources and the Biodiversity SEOS. For example, <i>DZ 42 Implement a policy to increase permeable areas in the DZ (through greenspaces, planting and landscaping) Qualitative measure with indirect emissions savings</i></p> <p><i>Action 27; Work in partnership with local community, business, and education groups to support initiatives that promote climate action and just transition on the following:</i></p> <ul style="list-style-type: none"> - Climate challenges and solutions, mitigation & adaptation - Active travel - Energy saving - Low carbon energy - Waste management & circular economy - Local food production, food waste management & reduction - Water conservation and harvesting - Local level carbon offsetting - Nature based solutions, net biodiversity gain. - Supplier engagement and green procurement aimed at SME's <p><i>Action 42 Explore the potential for integrating Nature Based Solutions (NBS) on all internal and GCC planning permitted projects to ensure climate resilience and promoting biodiversity net gain, thereby creating vibrant, liveable and sustainable public realm. Further to include sustainable urban drainage systems, with appropriate regard to environmental protection requirements, including designated European sites. Increase in leaf cover in Galway City area, considering trees and vertical shading solutions.</i></p> <p>Action 37 (tree strategy) and Action 41 (Blueways strategy) are recommended for additional mitigation to provide greater clarity and support for tree planting in appropriate locations and of appropriate mixes, to avoid indirect or direct loss of habitat that is important for a range of species including birds as well as supporting co benefits and nature based solutions approach.</p> <p>Reference should be made to good practice guidelines and references around NBS for example, the Grow Green Compendium of Nature Based Solutions (2020). Compendium of nature-based and 'grey' solutions - GrowGreen (growgreenproject.eu)</p>

⁵ Particulate pollution and its toxicity to fish: An overview ,Gokul, Ramesh Kumar, Prema, Arun, Paulraj, Faggio. Comparative Biochemistry and Physiology Part C Vol:270. 2023.

Topic	Discussion
	<p>Actions in particular those under the theme of Environment and Biodiversity are identified as positive for BFF as well as interacting positively across other SEOs namely soil, water, air, climate change with indirect positive effects and direct positive effects on population and human health and material assets. Mitigation is recommended to further support and strengthen protection of habitats and species for certain actions within this theme.</p> <p>In relation to other actions, such as those relating to landuse such as transport and Decarbonising zone existing mitigation in the Galway CDP would apply at development management and consenting, for example: Policy 5.2 Protected Spaces: Sites of European, National and Local Ecological Importance</p> <p>Protect Local Biodiversity Areas, wildlife corridors and stepping stones based on the Galway Biodiversity Action Plan 2012-2024 and support the biodiversity of the city in the Council's role/responsibilities, works and operations, where appropriate.</p> <p>Encourage, in liaison with the NPWS, the sustainable management of features which are important for the ecological coherence of the network of European sites and essential, by their linear or continuous nature or as stepping stones for the migration, dispersal and genetic exchange of wild species.</p> <p>Support the actions of the Galway City Council Heritage Plan 2016-2021 and any update and Biodiversity Action Plan 2014-2024 relating to the promotion of ecological awareness and biodiversity, the protection of wildlife corridors and the prevention of wildlife habitat fragmentation.</p> <p>Co-operate with the NPWS, landowners and stakeholders in the preparation and implementation of management plans for designated sites.</p> <p>Protect and conserve rare and threatened habitats and their key habitats, (wherever they occur) listed on Annex I and Annex IV of the EU Habitats Directive (92/43EEC) and listed for protection under the Wildlife Acts 1976-2000.</p> <p>Ensure that plans and projects with the potential to have a significant impact on European sites (SAC or SPA) whether directly, indirectly or in combination with other plans or projects are subject to Appropriate Assessment, under Article 6 of the Habitats Directive (92/43EEC) and associated legislation and guidelines, to inform decision making.</p> <p>Mitigation is recommended for a number of actions to emphasise focus on nature based solutions and co benefits as well as a number of new additional actions to align the actions closely with environmental and ecological assessments generally and the CDP in particular.</p> <p>Walking and cycling actions, if they were to take place on or near sensitive habitats or species vulnerable to disturbance would give rise to adverse effects. However, the existing environmental protection provisions in the CDP will apply and provide sufficient mitigation measures In addition mitigation measures are recommended for a number of these actions.</p>
Water resources	<p>Potential effects on water resources (and frequently biodiversity) in the absence of mitigation include:</p> <ul style="list-style-type: none"> • Surface water runoff from impermeable surfaces leading to reduced water quality in groundwater springs or surface waters affecting qualifying habitats and species downstream(impacts can range from short to long term); • Changes in the flow rate of watercourses arising from an increased footprint of impermeable surfaces within the Plan area - increasing the extent of impermeable surfaces will result in a decrease in infiltration and an increase in runoff; • Generally, land use practices can result in water quality impacts and whilst surface water impacts may be identified quickly, impacts to groundwater

Topic	Discussion
	<p>can take much longer to ascertain due to the slow recharge rate of this water resource;</p> <ul style="list-style-type: none"> Water quality impacts can also have human health impacts in the case where bacterial or chemical contamination arises. Pressures and impacts on material assets from climate change such as flooding with damage to wastewater treatment facilities or water supply is particularly relevant in this regard. <p>The Galway CDP 2023-2029, already include a range of provisions and measures to address and minimise the above effects, including measures around green and blue infrastructure such as <i>Policy 5.1 Green Network and Biodiversity</i></p> <p><i>1.Support sustainable use and management of areas of ecological importance, parks and recreation amenity areas and facilities through an integrated green network policy approach in line with the Galway Recreation and Amenity Needs Study and where superceded by the Greenspace Strategy, where it can be demonstrated that there will be no adverse impacts on the integrity of European sites.</i></p> <p>Flood risk management (Policy 9.1 Flood Risk:4. <i>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</i> and development control as well as adaptation measures that support nature based solutions. The CAP however further enhances and strengthens these through support for nature based solutions, sustainable food production and circular economy actions.</p> <p>Implementation of the Biodiversity Plan for the City create positive interactions for Water SEOS as well as cross cutting other SEOS in a positive manner.</p> <p>A key focus on the actions should be to prioritise Nature Based solutions and learn from other relevant case studies and examples from Ireland and with EU that have demonstrated excellent outputs that provide co benefits. See for example the Compendium of Nature Based Solutions (2020) – Green Cities for Climate and Water Resilience, Sustainable Economic Growth, Healthy Citizens and Environments - Compendium of nature-based and 'grey' solutions - GrowGreen (growgreenproject.eu)</p> <p>Measures around nature based solutions, creating long term direct positive effects on water resources, as well as soil and biodiversity, population and human health.</p>
<p>Soil and Geology</p>	<p>Soil quality and function may be enhanced through particular measures associated with flood resilience, nature based solutions and resource management in particular. The carbon sequestration function of soil and healthy soil quality are extremely significant, across several environmental parameters. Given the nature of landuse within the city area, agriculture emissions are low with residential the largest emissions sector and therefore much of the CAP focuses on this sector. The additional positive impact for retrofitting existing buildings generates positive impacts across SG SEOS as they reduce the need for greenfield land, reduce resource requirements and provide for adaptive reuse.</p> <p>Adaptive reuse and retrofitting of existing buildings locks in existing carbon and addresses climate change adaption through energy efficiency as well as reducing need for new land and resources for construction.</p> <p>EPA Research⁶ report identifies 4 main priorities for adaptive reuse and these should be referenced and applied across such actions in the CAP:</p> <p>1.Mainstreaming adaptation in the built environment. This includes prioritising adaptation as a critical second pillar of climate action; focusing on the full range of climate change risks (not simply flooding); integrating built environment adaptation</p>

⁶ Built Environment Climate Resilience and Adaptation (2019-CCRP-DS.21)EPA Research Report Prepared for the Environmental Protection Agency by School of Architecture, Planning and Environmental Policy University College Dublin Authors: Mark Scott, Louise Burns, Mick Lennon and Oliver Kinnan [Research Report 418.pdf \(epa.ie\)](#)

Topic	Discussion
	<p>with the wider land use system; capturing mitigation and adaptation benefits through holistic approaches; and focusing on the whole built environment and not only new-builds.</p> <p>2. Evidence and uncertainty in decision-making. Adaptation of the built environment requires a robust and geographically tailored evidence base; there is a need for granular and useable information on climate impacts. Uncertainty strengthens the case for early investment and points to adopting the precautionary approach, xii Built Environment Climate Resilience and Adaptation and further research is needed in relation to costs, responsibilities of key stakeholders, behaviour of building occupants and social vulnerability in relation to climate risks.</p> <p>3. Co-designing of adaptation interventions. This includes collaborative stakeholder engagement, the inclusion of climate scenarios as part of statutory public consultation and the testing of novel public engagement methods.</p> <p>4. Capacity-building requirements. This includes improving resourcing and institutional capacity, adopting new ways of working to avoid traditional siloed thinking and continued professional development and training for elected representatives.</p> <p><i>Action CE 1.1 Support circular initiatives such as prevention, reuse, repair and recycling of resources. Support the development of cooperative, community-owned and other collaborative ventures to foster more effective use and sharing of resources.</i></p> <p>Support for the circular economy in particular supporting enterprises, and local food production is also positive, particular if composting can be applied to enhance soil function.</p> <p>A number of the measures relating to soil are identified for mitigation via NBS, to further strengthen the environmental performance of these actions.</p>
Air Quality and Climate	<p>Overall, the CAP will contribute positively to climate change adaptation, and mitigation through the actions as well as the KPIs included in the plan that will allow robust monitoring of actions. In summary, actions relating to nature based solutions give rise to increased surface water storage and potential carbon sequestration with accompanying co benefits across most SEOS in particular landscape, population and human health, air quality, water and soil and biodiversity. These are dependent on such green and blue infrastructure resources (existing) being understood and surveys, with interventions underpinned by scientific and robust evidence base. The SEA and AA has recommended additional text for certain actions to increase the focus on Nature based solutions and ecological and environmental surveys and assessment.</p> <p>The focus on energy efficiency and innovation as seen through the actions identified in the CAP, examples include :</p> <p><i>Action 13 GCC to achieve and maintain ISO50001 Energy Management Certification</i></p> <p>Other related measures including key measures relating to behavioural change around transport and the increase in walking/cycling and public transport measures are essential in addressing transport emissions over the lifetime of the CAP and beyond. The support and actions in the DZ will facilitate peer to peer learning amongst communities and demonstrate successful actions at community and local scale. Key actions relate to GHG emission reductions on housing and transport the principal sectors for GHG emissions in the city. These also will provide co benefits in terms of addressing fuel poverty, local air quality (reduction in using fossil fuel) and active travel and public transport options as well as capacity building. The selection of an area consisting of parts of Newcastle, Ragoon, Shantalla, and Westside as the area which satisfies the requirements of a DZ in terms of size, feasible pathway to 51% reduction in GHG emissions over the decade, the potential influence of the Council, and stakeholder collaboration is also supported through a just transition approach where the overall deprivation rating of the area is marginally below average – disadvantaged based on HP Deprivation index (Pobal).</p>

Topic	Discussion
Material Assets	<p>Recognising the ecosystems functions of soil, water and biodiversity is a key element in the Nature Based solutions theme and is an important acknowledgement that also provides for positive effects across a number of SEOs.</p> <p>Many of the measures provide for mitigation and adaptation with a view to minimising adverse effects of climate change on material assets, including water conservation, also responding and facilitating behavioural and modal change in energy use and transport. Examples of these include the following:</p> <p><i>Action:30 Development and implementation of infrastructure and technology across the city to reduce water wastage, such as water fountains, and increase rainwater harvesting, in collaboration with Uisce Éireann where necessary.</i></p> <p><i>Action: 8Develop an energy master plan to include renewable and energy storage for Galway City, factoring medium and long-term scenarios (beyond 2030). Plan to include map of potential sites for development and quantifying power generation potential across the City.</i></p> <p><i>Action 9 Conduct climate risk assessment on the future impacts of climate change in Galway City.</i></p> <ul style="list-style-type: none"> • Promotion of nature based solutions and SuDs • Climate proofing local authority actions <p>Actions relating to energy efficiency, renewable energy and circular economy are also identified as generating positive, long terms effects, being consistent with Material Asset SEOs, as well as soil and geology and accompanying positive medium term effects on population and human health and water, biodiversity.</p>
Cultural Heritage	<p>Archaeology and Built heritage features are present throughout the plan area, and in particular those archaeological or built heritage features associated with the coastline or River Corrib may be particularly vulnerable to climate change effects. Clusters of built heritage features and historic settlements on the coastline and at riverine locations, increases their vulnerability to the effects of climate change. Cultural heritage is not often considered or captured adequately in coastal zone management planning and this can give rise to adverse effects on cultural heritage, for example: Overlooking cultural resources can result in</p> <ul style="list-style-type: none"> • loss of cultural identity associated with certain habitats; • loss of tourism, recreational and educational opportunities; • decline in local ecological knowledge, skills and technology pertaining to habitat management; • and loss of opportunities for social and cultural capital⁷. <p>Actions within he CAP identified as positive directly for CH SEOs include:</p> <p><i>Action 19 Establish annual climate festival week with events across the city including expert speakers, workshops, action demonstrations, incorporating culture and the arts.</i></p> <p>The following action will also contribute directly and indirectly to retention of older buildings that can support vernacular or protected architecture heritage:</p> <p><i>Action 24 Maximise utilisation of built environment throughout the city, support the upgrade of existing vacant and derelict residential and commercial properties include buy and release, repair and lease, Croí Cónaithe Cities, and so on and including utilising legislative powers such as Compulsory Purchase Orders/ Acquisition to facilitate such reuse where possible.</i></p> <p>This should interact with policies in the CDP as well as support for adaptive reuse/ reuse of existing buildings.</p> <p>Research and risk assessment is important to ensure cultural heritage assets (tangible and intangible) are identified and managed with sensitive interventions to the fabric of the tangible cultural heritage feature.</p>

⁷ Coastal cultural heritage: A resource to be included in integrated coastal zone management [SornaKhakzad^aMarnixPieters^bKoenraadVan Balen^cOcean & Coastal Management Volume 118, Part B](#)

Topic	Discussion
	Potential actions with Creative Ireland relating to climate change should be explored in the CAP.
Landscape	<p>Long term positive effects are identified for the CAP and landscape primarily through the nature based solutions, green and blue infrastructure, increased tree planting etc. Many of the measures in the CAP require a landscape level response such as recognition of green and blue infrastructure and corridors and this an important approach to take when responding to climate change.</p> <p>Overall, positive effects identified for Landscape SEOs, as landscape change can be considerable with climate change effects in terms of changing water levels, habitat change, transport measures and adaptation measures such as flood risk management. An increase in blue and green infrastructure, public realm and permeability would all create long term positive effects for the Landscape SEOs.</p> <p>Mitigation measures are recommended for a number of actions to strengthen consideration of landscape.</p>

5 Mitigation measures

Mitigation measures that will prevent, reduce, and offset as much as possible any significant adverse effects on the environment of the plan area resulting from the implementation of the CAP. Mitigation involves ameliorating significant negative effects. Where the environmental assessment identifies significant adverse effects, consideration is given in the first instance to preventing such impacts or where this is not possible, to lessening or offsetting those effects. Mitigation measures can be generally divided into those that:

- Avoid effects;
- Reduce the magnitude or extent, probability and/or severity of effect;
- Repair effects after they have occurred, and
- Compensate for effects, by balancing out negative impacts with positive ones.

There are many environmental protection measures in the Galway City Development Plan 2023-2029 that will apply and provide appropriate environmental protection and mitigation, and the SEA and AA processes identified additional mitigation measures. Examples of the mitigation measures to the CAP actions identified through the SEA and AA assessments are presented below in Table 5.1

TABLE 5-1 EXAMPLES OF MITIGATION MEASURES IDENTIFIED THROUGH THE SEA AND AA PROCESS

Action No.	Action Description	Included in Draft CAP? Yes/no
new action	In implementing this Galway City Climate Action Plan, ensure compliance with Galway Plan 2023-2029 and local area plan objectives and policies relating to environmental management, the protection of statutory Conservation Areas and ensure compliance with specific environmental management measures relating to this plan. Landuse plans and projects arising from this Climate Action Plan will be underpinned by Strategic Environmental Assessment, Environmental Impact Assessment, Appropriate Assessment, and Ecological Impact Assessments as relevant.	Yes Action 21
new action	Galway City Council will take account of any relevant recommendations in the EPA State of Our Environment Report 2024, once published, in implementing the Plan over its lifetime.	Included in Section 3.2 thematic focus of the CAP
new action	Galway City Council will consider any relevant updated actions, measures or recommendations that may arise in updates to the National Climate Action Plan over the lifetime of the Plan.	Included as a Key Performance indicator under Action 21 above
15	Establish climate ambassador program and forum to facilitate knowledge sharing, capacity building and just transition on climate and energy initiatives and nature based solutions and actions across the city. Program to include climate/ energy/NBS leaders and pioneers from throughout the city including businesses and community groups.	Yes
32	Deliver the community climate action fund and work to identify further funding streams for local climate action projects and support communities and voluntary sector in developing and implementing climate adaptation and mitigation projects at local level supporting nature based solutions that can provide co benefits to people and nature.	Yes

6 Monitoring

The monitoring programme will consist of an assessment of the relevant indicators and targets against the data relating to each environmental component. Similarly, monitoring will be carried out frequently to ensure that any changes to the environment can be identified.

It is recommended that data arising from planning applications, particularly in terms of environmental constraints mapping and Environmental Impact Statements be integrated into the GIS and monitoring system. This will assist in assessing cumulative impacts also, in particular ecology and water quality.

This Climate Action Plan will be implemented by Galway City Council. Implementation of the CAP and in turn monitoring and reporting will be pivotal in demonstrating commitment and leadership in climate action at the local level. A key part of the CAP is the provision of key performance indicators (KPIs) and annual reporting. Therefore the suggested monitoring table below, whilst adapted for the SEA monitoring prepared for the City Development Plan should cross reference and integrate the KPIs identified for the CAP 2024 -2029.

Key implementation and reporting activities that Galway City Council will undertake are:

1. **Planning for Implementation:** Devising an approach for the implementation of actions on an annual basis.
2. **Tracking and reporting progress through Key Performance Indicators:** Development and inclusion of plan level KPIs to track, measure and report on progress.

Table 6.1 presents the monitoring table.

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
Biodiversity Flora and Fauna BFF	Condition of European Sites Biodiversity gain	Control significant adverse impacts (direct, cumulative and indirect impacts) to relevant habitats, species or their sustaining resources in designated ecological sites and networks Control significant adverse impacts on rare and threatened habitats and species or their sustaining resources, including those in the Habitats Directive and the Wildlife Acts. Improvements to the green network and public realm whilst projecting the city's ecological heritage. Delivery of actions identified under River Basin Management Plan, All Ireland Pollinator Plan 2021-2026 and local plans including Galway Biodiversity Action Plan, Heritage Plan, Public Realm Strategy and forthcoming Greenspace Strategy.	GCC, NPWS, DHLGH, DTCAGSM, EPA, RBD stakeholders, GCC Biodiversity Action Plan and Heritage Plan stakeholders	NPWS and Department reports and database, National Biodiversity database centre, consultation with stakeholders where appropriate, LAPS, masterplans, large scale developments	Ongoing monitoring through the development management process Consultation with stakeholders to feed into 2 year report.

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
Population, Human Health and Noise PHHN	<p>Implementation of plan measures in relation to meeting population targets, improvements to provision of social and physical infrastructure including availability of public transport / public and community facilities, services, public realm and amenities</p> <p>Reduction in travel times and distances to and within the city and alleviation of traffic congestion</p> <p>Increase in modal shift from private car to public transport and active travel</p> <p>Increase in social inclusion and accessibility</p>	<p>Improvements to physical and social infrastructure, green network, public realm, active travel</p> <p>Delivery of actions in Galway Transport Strategy, LECP, Public Realm Strategy, forthcoming Greenspace Strategy</p>	GCC, Co Co, NTA, TII LECP stakeholders	GCC, TII, CSO, LECP, Healthy City and Age Friendly research, consultation with stakeholders where appropriate, LAPS, masterplans, large scale developments	Ongoing monitoring through the development management process and of plans and strategies including Galway Transport Strategy Consultation with stakeholders to feed into 2 year report
Air and Climate AC	<p>Implementation of Plan measures relating to climate reduction targets</p> <p>Traffic volumes and % modal shift, see also PHH monitoring measure</p> <p>Changes in air quality as identified during air quality monitoring programmes</p> <p>Improvements to the green network and public realm</p>	<p>Achievement of measures relating to climate reduction targets in plan and Galway Climate Adaption Strategy and 5 year action plan, future energy plan and energy action plan, implementation of Noise Action Plan</p> <p>Increase the percentage of population travelling by public transport including cycling and walking, and decrease in private vehicle dependency Improvement in Air Quality trends, particularly in relation to transport related emissions of NOx and particulate matter</p>	GCC, EPA, NTA, TII, DECC, CARO, SEAI, Climate Adaption Strategy stakeholders	GCC, SEAI , CSO databases, consultation with stakeholders where appropriate	Ongoing monitoring through the EPA monitoring programmes and regulation through development management process – planning conditions and enforcement Consultation with stakeholder to feed into 2 year report

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
Water W	<p>Status of water bodies and drinking water quality as reported by the EPA Water Monitoring Programmes</p> <p>Trends in water conservation</p> <p>Flood Risk Assessment incorporated into development proposals in flood risk areas</p> <p>Number of flood protection measures provided</p>	<p>Not to cause deterioration in the status or affect the ability of any surface water groundwater, transitional and coastal waters to achieve 'good status'</p> <p>Implementation of the objectives of the River Basin Management Plan 3rd Cycle (once finalised)</p> <p>Implementation of objectives of River Basin Management Plan, Water Framework Directive, EU (Drinking Water) Regulations, Bathing Water Quality Regulations</p> <p>Minimise development on land susceptible to significant flood and/or coastal erosion risk</p>	EPA, Irish Water, OPW, CFRAM stakeholders, RBD stakeholders including GCC and GCoCo	EPA, Irish Water Monitoring Programmes and databases, GCC, EPA, Irish Water reports, consultation with stakeholders where appropriate	Ongoing monitoring through the EPA monitoring programmes and regulation through development management process – planning conditions and enforcement. Consultation with stakeholders to feed into 2 year report
Soil and Geology SG	<p>Area of brownfield land developed</p> <p>Increased densities appropriate to neighbourhood character</p> <p>Reduction in vacant sites and derelict buildings on registers</p> <p>Monitoring of historical landfill sites, enforcement</p> <p>Increase in recycling, and recovery of C&D waste,</p> <p>Conservation status of GSI sites</p>	<p>Achievement of measures in plan to meet NPF AND RSES targets of at least 50% of all new homes be delivered within the existing built-up footprint (2032 target)</p> <p>Reduce brownfield lands within the city</p> <p>Reuse and recycle C&D waste at source and encourage use of appropriate materials including from local sources, implementation of waste permit regulations</p> <p>Safeguard soil quality and quantity and to ensure that soils remain healthy and capable of supporting human activities and ecosystems</p> <p>Retain conservation status of important geological heritage sites</p>	GCC, EPA, GSI,	GCC, GSI and EPA databases, consultation with stakeholders where appropriate, LAPS, masterplans, large scale developments	Ongoing monitoring through the EPA monitoring programmes and development management process. Consultation with stakeholders to feed into 2 year report

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
Material Assets MA	<p>Increase in sustainable transport facilities and infrastructure throughout the city</p> <p>Number of people travelling to work or school by public transport, walking or cycling</p> <p>Improvements in the public realm</p> <p>Changes in water quality as identified during water quality monitoring programmes</p> <p>Volume of waste recycled and to landfill</p> <p>Control of inappropriate development within SEVESO III site consultation zone</p> <p>SEE also PHHN and AC and BFF</p>	<p>Achievement of measures in the plan to Maintain and improve a high quality built environment</p> <p>Have an integrated, sustainable transport and land use system that eases movement to and within the city and promotes sustainable transport modes</p> <p>Meet EU, national and regional objectives for water quality and for recycling of municipal waste and its diversion from landfill</p> <p>Control inappropriate development within SEVESO III site consultation zone</p> <p>Delivery of actions in Galway Transport Strategy, Public Realm Strategy, forthcoming Greenspace Strategy</p>	GCC, Irish Water, EPA, NTA,TII, Regional Waste Authority, HSA	GCC, CSO, NTA, TII, Irish Water and EPA databases, consultation with stakeholders where appropriate	<p>Ongoing monitoring through the EPA monitoring programmes, development management process and of plans and strategies including Galway Transport Strategy</p> <p>Consultation with stakeholders to feed into 2 year report</p>

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
Cultural Heritage CH	<p>Implementation of Plan measures relating to protect and promote cultural, built, archaeological and linguistic heritage</p> <p>Reuse and adaption of existing built heritage</p> <p>Number of grants administered for protected structures and cultural heritage projects/activities</p> <p>Number of ACA management plans prepared, number of additions to the RPS and any additional ACAs</p> <p>Increase in use of Irish in signage and place names of new residential developments, public roads, parks</p>	<p>Increase uptake of grants available for protected structures and to promote good conservation practice</p> <p>Expand the RPS and designate additional ACAs, where appropriate</p> <p>Increase the number of uninhabited and derelict structures that are restored opposed to demolition. Delivery of actions identified in Everybody Matters Cultural Strategy, Galway Heritage Plan, Public Realm Strategy, Cultural Strategy and Galway City Arts Plan</p>	GCC, DHLGH, DTCAGSM, GCC Heritage Plan, Cultural Strategy and Arts Plan stakeholders	GCC, NIAH databases, consultation with stakeholders where appropriate LAPS, masterplans, large scale developments	Ongoing monitoring through Heritage plan and development management process Consultation with stakeholders to feed into 2 year report
Landscape L	<p>Impacts on protected views/prospects, built heritage and G and RA zoned lands incorporated into development proposals as appropriate</p> <p>Improvements to the green network and public realm</p>	<p>Protect and enhance built heritage, designated ACAs, protected views/prospects and G and RA zoned lands</p> <p>Protect and enhance the green network and public realm in a sustainable manner</p> <p>Delivery of local area plans, environmental improvement schemes, ACA management plans and urban design framework plans, actions identified under Galway</p>	GCC, Galway Biodiversity Action Plan and Heritage Plan stakeholders,	GCC, NIAH databases, National Biodiversity data centre, consultation with stakeholders where appropriate, LAPS, masterplans, large scale developments	Ongoing monitoring through development management process Consultation with stakeholders to feed into 2 year report

SEA Topic	Indicators	Targets	Key responsibly authority /stakeholders	Data sources	Remedial Action
		Biodiversity Action Plan, Heritage Plan and Public Realm Strategy			

