



Comhairle Chontae na Gaillimhe
Galway County Council

STRATEGIC ENVIRONMENTAL ASSESSMENT

Environmental Report

For the County Galway Climate Action Plan 2024 -2029

Prepared for Galway County Council under SI 435 of 2004 as amended

November 2023

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County Galway Climate Action Plan 2024-2029

1 Introduction

This is the Environmental Report that has been prepared as part of the Strategic Environmental Assessment of the draft Galway Climate Action Plan 2024-2029 (CAP). It sets out how the SEA has been undertaken and presents the findings of the assessment of the actions of the draft CAP together with its' reasonable alternatives.

Under *Directive 2001/42/EC - Assessment of Effects of Certain Plans and Programmes on the Environment*, certain plans and programmes require an environmental assessment. This is known as the Strategic Environmental Assessment (SEA) Directive. Article 1 of this Directive states that its objective is:

'to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.'

This Environmental Report complies with the requirements of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) as implemented in Ireland through Statutory Instrument (SI) No.435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended).

These regulations are a statutory requirement for plans or programmes which could have significant environmental effects, and the assessment process aims to identify where there are potential effects and how any negative effects might be mitigated.

1.1 Background to County Galway CAP

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 County 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.

1.1.1 Local Authority Climate Action Plans

Local Authorities will have a particularly important role in the delivery of both climate mitigation and adaptation. This is reflected in the provisions of the Climate Action and Low Carbon Development (Amendment) Act, 2021, which requires each Local Authority to prepare a CAP specifying the mitigation and the adaptation measures to be adopted by the Local Authority.

Local authorities are key drivers in advancing climate policy at the local level and the Galway CAP aims to strengthen the alignment between national climate policy and local circumstances with the prioritisation and acceleration of evidence-based measures, to assist in the delivery of the climate neutrality objective for Galway County Council.

Galway County 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. In order to ensure that the CAP is centred around a strong understanding of the role and remit of Galway County Council on climate action, the Plan is being developed through the following framework.

- Full accountable: Targeted actions for areas where Galway County Council has full accountability for climate action within their own operations.
- Influence: Actions for where Galway County 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 County 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 County 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 County Council on climate action, the Plan will not include actions whereby their implementation and achievement fall outside our role, remit, and governance.

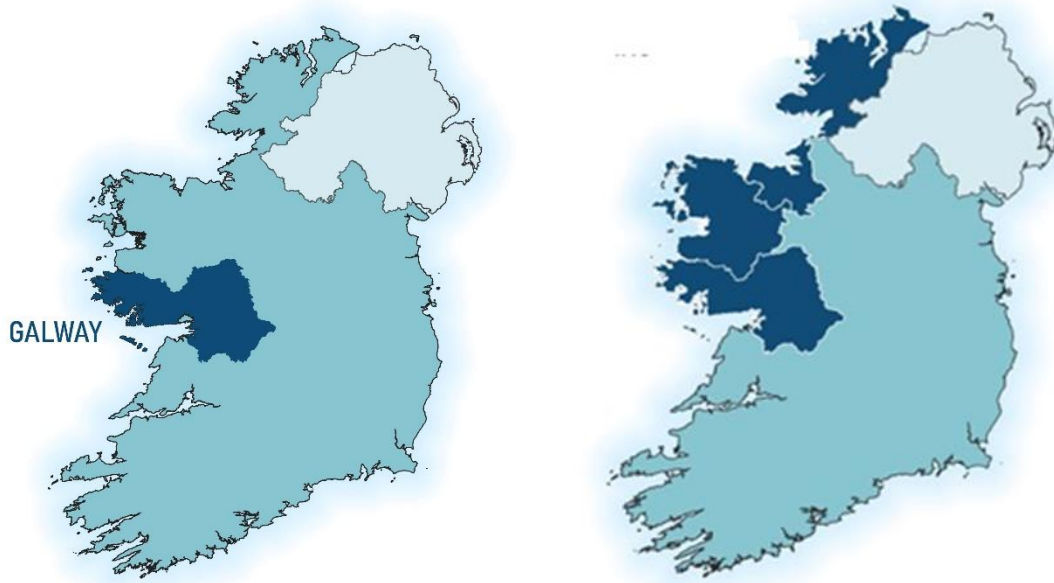
1.2 Scale, Nature and Location of the County Galway CAP

The plan will cover all of the functional area of County Galway. **Figure 1.1** shows the location of County Galway, and the Atlantic Seaboard North Climate Action Regional office extent (CARO). Key themes with supporting actions include:

- Sustainability and resource management.
- Governance
- Community resilience and transition
- Environment and Biodiversity
- Transport and mobility

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 current Galway County Development Plan 2022-2028, and SEA Environmental Reports and Natura Impact Reports that accompanies same.

FIGURE 1-1 COUNTY GALWAY AND THE CARO ATLANTIC SEABOARD NORTH



1.3 Structure and Preparation of this Environmental Report

Regulations contained in Schedule 2A of Statutory Instrument (S.I.) 436 of 2004 (as amended) details the information to be contained in an Environmental Report. The following **Table 1.1** lists the information required and details where this information is contained in this Environmental Report.

Table 1-1 Information Required to be contained in an SEA Environmental Report.

Schedule 2B of Statutory Instrument 435 of 2004	Addressed in this SEA ER
(a) an outline of the contents and main objectives of the plan and relationship with other relevant plans	Chapter One Introduction and Chapter Two Methodology outlines contents and main objectives Chapter Three details the relationship with other relevant plans
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Chapter Four Baseline Environment provides this information
(c) the environmental characteristics of areas likely to be significantly affected	Chapter Four Baseline Environment provides this information
(d) any Issues and Threats problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive	Chapter Four Baseline Environment provides this information.
(e) the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation	Chapter Five: SEA Objectives provides this information
(f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health,	Chapter Seven, Significant Effects on the Environment provides this information

Schedule 2B of Statutory Instrument 435 of 2004	Addressed in this SEA ER
fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors	
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan	Chapter Eight, Mitigation Measures provides this information
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Chapter Six, Alternatives Considered provides this information and difficulties encountered are listed at the end of Chapter Two, Baseline Environment.
(i) a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan	Chapter Nine, Monitoring provides this information
(j) a non-technical summary of the information provided under the above headings	This is provided as a separate document to this Environmental Report but is also available

2 Methodology

This chapter presents the SEA methodology in detail and outlines the steps required for SEA. The methodology used to carry out the SEA of the plan reflects the requirements of the SEA regulations and available guidance on undertaking SEA in Ireland, including:

- SEA Methodologies for Plans and Programmes in Ireland – Synthesis Report Environmental Protection Agency (EPA), 2003;
- Implementation of SEA Directive (2001/42/EC) Assessment of the Effects of Certain Plans and Programmes on the Environment – Guidelines for Regional Authorities and Planning Authorities - published by the Department of the Environment, Heritage and Local Government, 2004;
- Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436 and SI 435 of 2004);
- Planning and Development (Strategic Environmental Assessment) Regulations 2011 (S.I. No. 201 of 2011);
- Planning and Development (Environmental Assessment of Certain Plans and Programmes) (S.I. No 200 of 2011);
- SEA Process Checklist Consultation Draft 2008, EPA 2008;
- Circular Letter PSSP 6/2011 Further Transposition of EU Directive 2001/42/EC on Strategic Environmental Assessment;
- Guidance on integrating climate change and biodiversity into Strategic Environmental Assessment European Union 2013;
- SEA Resource Manual for Local and Regional Authorities, Draft Version, 2013;
- Integrating Climate Change into Strategic Environmental Assessment in Ireland – A Guidance Note, EPA, 2015;
- Developing and assessing alternatives in Strategic Environmental Assessment, EPA, 2015;
- SEA of Local Authority Land Use Plans - EPA Recommendations and Resources (2020).
- Good practice guidance on Cumulative Effects Assessment in SEA, EPA, 2020
- Guidance on Strategic Environmental Assessment (SEA) Statements and Monitoring, EPA, 2020.

2.1 Stages 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).

2.1.1 Scoping

The purpose of the SEA Scoping report is to identify the scope of the SEA and ensure that relevant data and environmental topics are included in the SEA. The Scoping report was issued to the statutory environmental authorities from 27th September to 25th October 2023.

Table 2.1 below summarises the main issues raised by consultees and the SEA response to same.

Consultee	Summary of comments	SEA Response
	<p>You should ensure that the Plan aligns with national commitments on climate change mitigation and adaptation, (such as the latest National Climate Action Plan) as well as any relevant sectoral or regional adaptation plans and adjacent local authority climate action plans.</p> <p>The Plan should include a commitment to 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.</p> <p>The Plan and SEA should take into account the recent Climate Council Annual Review report, which is available at: https://www.climatecouncil.ie/councilpublications/annualreviewandreport/CCAC-AR2023-FINAL%20Compressed%20web.pdf</p> <p>Additionally, the relevant objectives and policy commitments of the National Planning Framework and the Northern and Western Regional Spatial and Economic Strategy and the Galway County Development Plan should be aligned with and considered, as appropriate.</p>	<p>Relevant sectoral climate action and adaptation plans are considered within Chapter 3 and 4 of this SEA ER.</p> <p>Noted, agreed.</p> <p>Relevant objectives from national, regional and county plans are considered and aligned with as relevant.</p>
	<p>Greenhouse Gas Emissions</p> <p>In preparing the Plan and SEA, the direct and indirect impacts of the Plan on greenhouse gas emissions and removals should be assessed. The Agency's most recent projections reports Ireland's Greenhouse Gas Emissions Projections 2022-2040 (EPA, 2023) and Ireland's Provisional Greenhouse Gas Emissions 1990-2022 (EPA, 2023) should be taken into account. The Climate Action Plan identifies actions to decarbonise electricity generation, the built environment and transport and to move towards carbon neutrality for agriculture, forest and land use sectors. The Plan should also integrate and align with the relevant actions in the Climate Action Plan, as appropriate</p>	<p>Actions in the plan address transport, built environment, landuse, as well as agriculture and forestry. Some additional actions are recommended in this regard through the SEA and AA assessment processes.</p>
	<p>Climate Adaptation</p> <p>In preparing the Plan and SEA, you should consider how the impacts of climate change, individually and in combination, are likely to influence the implementation of the Plan. The Plan should look to improve resilience of existing and planned critical infrastructure, systems and procedures to the effects and variability of climate change. Vulnerable populations should be considered in the context of just transition/adaptation. The cascading effects of proposed adaptation measures should also be considered. Recent extreme weather events could be useful to assist in identifying areas where for further work is needed to improve resilience, e.g. the resilience of critical water service infrastructure to flooding and drought</p>	<p>The cumulative effects of adaptation measures is considered in Chapter 7 of this SEA.</p>
	<p>The Plan should include appropriate adaptation measures that can be implemented either directly or through relevant land use plans and/or specific plans e.g. Flood Risk Management Plans, River</p>	<p>Will be considered and integrated as appropriate.</p>

Consultee	Summary of comments	SEA Response
	<p>Basin Management Plans etc. The Plan will also help inform local authority land use and transport planning. Additional aspects to consider may include changes in native species and habitats and the spread of invasive species, pests and pathogens. In this regard, the Plant Atlas 2020 project looking at Ireland's changing flora might be useful to consider. A summary of this results can be found at: https://bsbi.org/wpcontent/uploads/dlm_uploads/2023/02/BSBI-Plant-Atlas-2020-summary-reportIreland-WEB.pdf</p>	
	<p>Water Quality The Plan should take into account the most recent Water Framework Directive water quality status and risk information, available on the EDEN WFD app. Relevant future projections of river flow are available in either EPA research reports (such as HydroPredict, pending), or academic papers related to these projects.</p>	Noted, will be considered.
	<p>Air quality The Plan should take into account the Draft National Clean Air Strategy (DECC). The Air Quality in Ireland 2021 Report (EPA, 2022) sets out the most recent status in each of the four air quality zones in Ireland and may be useful to consider. Data on levels of atmospheric pollutants from the EPA's national ambient air quality monitoring network should also be integrated as appropriate. The pollutants of most concern are traffic-related, including Particulate Matter and Nitrogen Dioxide.</p>	Noted, will be considered given localised transport emissions and impacts on biodiversity, water and human health.
	<p>Recent EPA Climate change related publications Some recent climate change publications that may be useful to consider in preparing the SEA and the Plan are shown below: - Ireland's Greenhouse Gas Emissions Projections 2022-2040 (EPA, 2023) - Ireland's Final Greenhouse Gas Emissions 1990-2021 (EPA, 2023) - Ireland's Provisional Greenhouse Gas Emissions 1990-2022 (EPA, 2023) - Climate Change's Four Irelands (EPA, 2022) - Ireland's Air Pollutant Emissions 2021 (1990-2030) (EPA, 2023)</p> <p>Additionally, further reports/publications are available at: can be consulted at https://www.epa.ie/publications/monitoring--assessment/climate-change/.</p> <p>Research report 429: Building Coastal and Marine Resilience in Ireland (EPA, 2023) may be useful to consider. It discusses the need for identification and increased awareness of climate change risks to Ireland's coastal communities. It also highlights the importance of building national resilience across socio-ecological and economic systems. Other climate- related environmental research reports are available at: https://www.epa.ie/publications/research/climate-change</p>	Noted, will be reviewed and included as appropriate.
	<p>EPA State of the Environment Report Our State of Environment Report, Ireland's Environment - An Integrated Assessment 2020 (SOER2020) identifies thirteen high level 'Key Messages for Ireland'.</p>	Noted

Consultee	Summary of comments	SEA Response
	<p>Delivering Ireland’s long-term sustainable development and environmental objectives will involve many different stakeholders to address these key actions. The report recognises the need for full implementation of existing environmental legislation and review of governance/coordination on environmental protection across public bodies. Specifically, information provided in the following chapters should be considered, as appropriate and relevant. - Chapter 2 (Climate) highlights the clear need for systemic change in Ireland to ensure the country will become the climate neutral and climate resilient society it aspires to be. More urgency is needed to deliver actions on climate mitigation and adaptation and to ensure that Ireland meets its international obligations to reduce greenhouse gas (GHG) emissions. Further measures are required to meet national and EU ambitions to keep the global temperature increase to 1.5°C.</p> <p>These measures will contribute to Ireland achieving climate neutrality by 2050. - Chapter 11 (Transport). The transport sector has a significant impact on the environment, including being responsible for 20 per cent of Ireland’s greenhouse gas emissions. A sustainable mobility transformation is required, with the next decade crucial, whereby necessary journeys are made by sustainable modes such as walking, cycling and public transport, followed by using electric vehicles where unavoidable. For this transformation to happen the measures relating to transport in the Climate Action Plan, and other necessary measures, must be fast tracked.</p> <p>Long-term, integrated spatial and transport planning can achieve compact development and move trips to other modes of transport, including cycling and should be supported in the Plan. Shifting to these modes is an essential part of a sustainable and climate-neutral transition for the transport sector. - Chapter 12 (Energy). Almost 90% of our total energy use is provided by combustion of mostly imported fossil fuels, which is unsustainable, and we need to begin fast tracking measures within the Climate Action Plan and other necessary solutions. This will involve strategic planning to transform this situation by 2050. Transitioning to using clean energy is essential for the protection of human health, our climate and the wider environment and will help support sustainable development of our society and economy. - Other chapters to consider include Chapter 6 (Nature) and Chapter 13 (Environment and Agriculture).</p>	
	<p>Population and Human Health: Air quality and water quality considerations should also be included in the list of aspects to be considered in relation to population and human health. Issues around equity and how vulnerable groups can be best assisted in dealing with and adapting to climate change should be considered, as relevant to the Plan.</p>	<p>These topics are considered in Chapter 4, 7 and mitigation measures recommended as appropriate .</p>

Consultee	Summary of comments	SEA Response
	<p>Biodiversity: The Plan should also seek to protect existing green and blue infrastructure and key ecological corridors from inappropriate development.</p> <p>Water Resources: With regards flooding, the Plan should consider the need for appropriate zoning and development of lands to avoid incompatible land uses in areas at risk of significant flooding.</p> <p>Soils / Geology: The protection of high nature value farming areas, and key agricultural lands should be considered. Where natural resources are required to support development, these should be carried out as efficiently as possible.</p> <p>Landscape: The key issues for the SEA to consider could also include the potential ‘visual impact’ of any proposed measures with potential to impact on sensitive landscape areas.</p> <p>Material Assets Transportation: The Plan should align with the transport commitments in the National Planning Framework, Northern and Western Regional Spatial and Economic Strategy, where appropriate and relevant.</p> <p>Water Supply: Uisce Eireann’s National Water Resources Adaptation Framework (and any relevant Regional Water Resource Plans) takes account of potential climate change implications for drinking water supply/service provision and may be also useful to consider.</p> <p>Cross-cutting issues Climate change will affect all aspects of our economy and society, with many issues impacting on the operations of individual local authorities. In implementing the Plan and in responding effectively to climate change, coordination, and collaboration among stakeholders on cross-cutting issues is needed</p>	
<p>Department of Housing, Heritage and Local Government</p>	<p>Having considered the SEA Scoping Report, the Department makes the following observations:</p> <ol style="list-style-type: none"> 1. The Department would welcome a Strategic Environmental Objective addressing ‘no net contribution to biodiversity losses or deterioration’, which accords with the wording of <i>Objective 1.1.3 of the National Biodiversity Action Plan 2017 – 2021</i>. This objective requires all Public Authorities and private sector bodies to ‘<i>move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure</i>’. 2. The Department would welcome the inclusion of the impact of atmospheric ammonia and nitrogen deposition associated with biogas production/anaerobic digesters on sensitive nature conservation sites as a key consideration in relation to Biodiversity, Flora and Fauna. 3. The Department recommends the inclusion of carbon balance calculations for Renewable Energy Developments, particularly on peatlands. Where possible, renewable energy projects on peatlands should include peatland restoration measures. 4. The Department recommends that all wind and solar farm planning proposals submitted to the planning authority include a site specific Biodiversity Management Plan (BMP), a plan that clearly outlines the measures and actions required for the protection and enhancement of biodiversity 	<p>1.A new SEO has been included in the SEA ER to reflect the National Biodiversity Action Plan; the County Galway RES (Appendix 1 of the CDP) includes the following : <i>RPO 5.5 – Ensure efficient and sustainable use of all our natural resources, including inland waterways, peatlands, and forests in a manner which ensures a healthy society a</i></p>

Consultee	Summary of comments	SEA Response
	<p>during the operation and decommissioning of the development. The plan should include a detailed programme for monitoring key ecological parameters with clear targets and indicators. This data should be readily accessible and used to inform future solar farm developments. Guidelines, including the guidelines on solar farms recently produced by the NBDC https://pollinators.ie/new-guideline-pollinator-friendly-management-of-solar-farms/ should be consulted.</p> <p>5. Measures should be included in the SEA for collective scientific analysis of postplanning species monitoring reports submitted to the Local Authority to ascertain positive and negative species trends and success or otherwise of mitigation at Local Authority level and to inform future development. The recent Department publication 3 'Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland'1 should be consulted</p>	<p><i>clean environment and there is no net contribution to biodiversity loss arising from development supported in this strategy. Conserve and protect designated areas and natural heritage area. Conserve and protect European sites and their integrity; in addition to: LARES Policy Objective 36 Environmental and Ecological assessments of renewable energy</i></p> <p>2. noted, issue of ammonia is highlighted in Section 4 Key issues</p> <p>3. Carbon balance calculations are noted.</p> <p>4. the CAP actions support and do not replace the Renewable Energy Strategy for the Galway CDP.</p> <p>5. Noted, this is considered within the CAP</p>
<p>National Seafood Centre Dept of Agriculture, Food and Marine</p>	<p>It is essential that the socio-economic reliance on the seafood sector is fully recognised and is factored into any Climate Change Action plan. Fishing and food security is as key a part of Government Policy. Food Vision 2030 recognises and values the role of primary food producers. The Seafood industry is experiencing a period of difficult change, arising from the ongoing consequences of the EU UK Trade and Co-operation agreement which are specific and impactful on Ireland's seafood sector. There is now ever-increasing demand on the marine space from Offshore Renewable Energy (ORE), Marine Spatial Planning, Marine Protected Areas (MPAs), and other environmental measures.</p>	<p>Noted. Actions in the CAP do not directly relate to the seafood sector though comments are noted and ref to the marine spatial plan and Offshore Renewable Energy are noted</p>

Consultee	Summary of comments	SEA Response
	<p>Our coastal communities and maritime sectors will continue to play a significant role in contributing to our climate goals and will continue to be consulted and supported in the transition to carbon neutrality. The seafood industry, through both the Sectoral Adaptation Plan (Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan) and the annual Climate Action Plan (CAP23) continue to support initiatives to improve understanding of our marine area and ensure sustainable resource use, including through bio and circular economy initiatives. These plans require consideration in the SEA process.</p> <p>Also for consideration in the SEA process is the European Commission’s Communication on the energy transition of the fisheries and aquaculture sector as part of its Fisheries Policy Package. This proposes the establishment of an Energy Transition Partnership (ETP) to develop a roadmap for the energy transition of the sector towards climate neutrality by 2050. The roadmap will set out investment needs, sector initiatives and inform policy decisions to help achieve this transition. The ETP is a multi-stakeholder platform intended to promote co-operation, knowledge sharing and dialogue between private and public stakeholders in order to accelerate the energy transition in the fisheries and aquaculture sector. This Partnership will help to shape the development of future transitional actions for Ireland’s seafood sector. Local authorities should include relevant steps to support a Just Transition for the sea fisheries and aquaculture sectors in their Climate Action Plans.</p>	<p>Sectoral Adaptation plans are referenced in Ch 3</p> <p>Noted, the Seafood Development Programme reflects some of these actions. Just transition needs are noted.</p>
<p>Geological Survey of Ireland</p>	<p>With reference to your email received on the 09 October 2023, concerning the Galway County Council Climate Action Plan 2024-2029, Geological Survey Ireland would encourage use of and reference to our datasets. This data can add to the content and robustness of the SEA process. With this in mind please find attached a list of our publicly available datasets that may be useful to the environmental assessment and planning process. We recommend that you review this list and refer to any datasets you consider relevant to your assessment. The remainder of this letter and following sections provide more detail on some of these data.</p> <p>Recommended datasets include: Geoheritage, Groundwater, Geotechnical, Geohazards, Geothermal energy, Natural resources plus research projects.</p>	<p>Noted the datasets have been considered through the SEA process and applied as appropriate.</p>

2.1.2 Baseline data

The baseline data assists in describing the current state of the environment, facilitating the identification, evaluation and subsequent monitoring of the effects of the plan. It helps identify Issues and Threats in and around the plan area and in turn these can be quantified (for certain environmental parameters) or qualified. This highlights the environmental issues relevant to each SEA parameter and ensures that the plan implementation does not exacerbate such problems. Conversely this information can also be used to promote good environmental practices and opportunities for environmental enhancement, thereby improving environmental quality where possible.

Baseline data was gathered for all parameters.

Other data was gathered from the SEA ER of the North and Western Regional Economic and Spatial Strategy, NPWS, Birdwatch Ireland, Bat Conservation Ireland, National Biodiversity Centre, Irish Water, the EPA, Met Eireann and other sources as appropriate including reports recommended by the EPA in their Scoping Submission. Footnotes throughout the document, particularly in Chapter Four present the reference and source.

The SEA has also used a Geographical Information System (GIS) in the following ways:

- To provide baseline information on a range of environmental parameters;
- To assist in assessment of alternatives;
- To help assess in-combination or cumulative impacts, and
- To provide maps to illustrate environmental parameters in the SEA Environmental Report.

2.1.3 Approach to assessment of significant environmental impacts

The principal component of the SEA involves a broad environmental assessment of the CAP. A methodology that uses the concept of expert judgement, public consultation, GIS and matrices, both to assess the environmental impact and to present the conclusions has been adopted in this SEA.

Key to assessing the above is setting a specific set of environmental objectives for each of the environmental topics. The objectives are provided in Chapter Five and include all aspects of the environment such as Cultural heritage, Population and Human health, and Biodiversity, Flora and Fauna.

The assessment described within this Environmental Report aims to highlight the potential conflicts, if they are present, between the actions identified in the CAP with the Strategic Environmental Objectives. Furthermore, the assessment examines the potential impact arising from the plan's implementation on sensitive environmental receptors.

The SEA Directive requires that information be focused upon **relevant aspects** of the environmental characteristics of the area likely to be **significantly affected** by the plan and the likely change, both positive and negative, where applicable.

Chapter Seven provides a discussion, where relevant, on the significance and type of the identified impact in accordance with current guidelines.

A key part of the SEA process has been the integration of the draft CAP, the SEA and Appropriate Assessment. The SEA legislation and guidelines highlight the importance of the integration between the preparation of the draft CAP and the SEA and AA processes. The iterative nature of the SEA process is such that the CAP is informed by environmental considerations throughout the

preparation of the plan. The Natura Impact Report is a separate document to the Environmental Report both of which accompany this draft CAP.

2.1.4 Mitigation

Section (g) of Schedule 2B of the SEA Regulations requires information on the mitigation measures that will be put in place to minimise/eliminate any significant adverse impacts due to the implementation of the plan. Chapter Eight of this SEA ER highlights the mitigation measures that will be put in place to counter identified significant adverse impacts due to the plans' implementation.

The CAP has been prepared having regard to the environmental protection objectives already within the draft plan and the iterative process between SEA and plan preparation. However, some unavoidable residual issues may remain and therefore mitigation measures are required. Chapter Nine details the mitigation measures necessary to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the CAP.

2.1.5 Monitoring

Article 10 of the SEA Directive sets out the requirement that monitoring is to be carried out of the significant environmental effects of the implementation of the plan in order to identify at an early stage any unforeseen adverse effects and to be able to undertake appropriate remedial action. Chapter Nine presents the monitoring requirements for the plan.

2.1.6 Habitats Directive Assessment

The Habitats Directive requires, *inter alia*, that plans and programmes undergo AA screening to establish the likely or potential effects arising from implementation of the plan. If the effects are deemed to be significant, potentially significant or uncertain then the plan must undergo Stage 2 AA. The preparation of the CAP, SEA and AA are taking place concurrently and the findings of the AA have informed both the SEA and the plan itself. The SEA has also applied the methodology for Integrated Biodiversity Assessment where relevant (EPA, 2015).

2.1.7 Data Gaps

Data gaps are present in terms of upto date human health and population information. More broadly, understanding the interactions between climate change, weather events, and impacts on water and biodiversity in particular are complex. Sectoral climate change adaptation plans have been referenced and used to fill these data gaps where possible.

The SEA ER has used an ecosystems services modelling approach to attempt to address these data gaps particularly in terms of understanding the role and inter-relationships between environmental parameters including water resources, biodiversity and human health.

3 Relationships to Plans

Under the SEA Directive, the relationship between the and other relevant plans and programmes must be taken into account. The preparation of the CAP must be considered within the context of a hierarchy of policies, plans and strategies which include international, national, regional and local level policy documents. These documents set the policy framework within which the CAP will operate. A list of the key relevant international, national, regional and county policies to be included in the review are provided below in Sections 3.2 to 3.4; Section 3.5. The list below is adapted from the EPA SEA of Local Authority Land-Use Plans - EPA Recommendations and Resources 2023 (Version 1.19)¹. **Table 3.1** identifies key principles that inform the SEA process arising from this review and how they relate to the EPA Themes in the State of Ireland’s Environment as well as the UN Sustainable Development Goals.

3.1 International and National

- United Nations Sustainable Development Goals
- National Planning Framework(under review currently) (DHLGH)
- National Biodiversity Plan (DHLGH)
- Climate Action Plan 2022 (DECC)
- Sectoral Climate Change Adaptation Strategies and Low Carbon Roadmaps Sectoral Adaptation Plan (Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan) and the annual Climate Action Plan (CAP23)
- National Mitigation Plan (DECC)
- National Adaptation Framework (DECC)
- National Policy Position on Climate Action and Low Carbon Development (DECC)
- EU Climate Adaptation Strategy 2021
- National Broadband Plan (DECC)
- National Renewable Electricity Policy Framework (in preparation DECC)
- Grid 25 Implementation Strategy (Eirgrid)
- Framework for Alternative Fuel Infrastructure in Transport (DoT)
- National Bioenergy Plan (DECC)
- National Landscape Strategy (DHLGH)
- Smarter Transport / Strategic Framework for Integrated Land Transport (DoT)
- National Greenway Strategy (DoT)
- State of the Environment Report 2020 (EPA)
- Waste Action Plan for a Circular Economy (DECC, 2020)
- Draft National Hazardous Waste Management Plan (EPA, in preparation)
- National River Basin Management Plan for Ireland (DHLGH)- Draft in preparation and under notification by European Commission to respond within 2 months (due November 2023)
- National Marine Planning Framework (DHLGH)
- Water Services Strategic Plan (Irish Water)
- Capital Investment Programme (Irish Water)
- Draft Water Resources Management Plan (Irish Water)
- National CFRAMS Programme (OPW)
- Clean Air Strategy 2023 (DECC)

3.2 Regional and Local

- North Western Regional Economic and Spatial and Strategy
- Relevant CFRAMS Flood Risk Management Plan (OPW)
- Pollution Reduction Programmes for Shellfish Waters (DHPLG)

¹ [Preliminary SEA Scoping Submission – Greater Dublin Area \(epa.ie\)](https://www.epa.ie/publications-and-reports/sea/sea-scoping-submission-greater-dublin-area)

- Regional Waste Management Plan (CUWR)
- National Investment Framework for Transport Investment (DTTAS)
- National River Basin Management Plans (DHPLG)
- Galway County Council Documentation: Galway County Development Plan 2022-2028 and associated environmental assessments including SEA Environmental Reports(ER), Natura Impact Reports (NIR) and Strategic Flood Risk Assessment (SFRA).
- Galway County Heritage and Biodiversity Plan 2017-2022
- Galway Climate Change Action Plan 2019-2024

3.3 Key implications and principles arising from the Plan, Policy and Programme Review.

Arising from the review, several key principles and implications for the SEA ER can be established. These principles are considered through the SEA process and inform the assessment. For consistency the Strategic Environmental Objectives (SEOs) developed for the Galway County Development Plan 2022 -2028 are proposed for application in the SEA of the CAP, as appropriate. In addition, the key environmental messages identified in the EPA 'State of the Environment' report for 2020 are presented, where relevant, to align the key principles with these key environmental messages and challenges for the environment, in addition to relevant UN Sustainable Development Goals. Please see **Table 3.1** overleaf which presents this information. SEOs were not commented upon during the SEA Scoping stage and remain as shown below and in Chapter 5.

TABLE 3-1 KEY PRINCIPLES AND IMPLICATIONS FOR THE SEA OF THE COUNTY GALWAY CAP 2024-2029

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028		EPA Ireland's Environment 2020	UN Sustainable Development Goals
Climate Change	<ul style="list-style-type: none"> • <i>Support the delivery of all national climate policy as appropriate to the county with the prioritisation and acceleration of evidence-based measures.</i> • To minimise emissions of greenhouse gasses • Integrate sustainable design solutions into the County's infrastructure (e.g. energy efficient buildings: green infrastructure) Contribute towards the reduction of greenhouse gas emissions in line with national targets • Promote development resilient to the effects of climate change • Promote the use of renewable energy, energy efficient development and increased use of public transport 	SOE3 Health and Wellbeing SOE5 Air Quality SOE4 Climate SOE6 Nature SOE 8 Marine SOE9 Clean Energy SOE 11 Water Services SOE12 Circular Economy SOE13 Landuse	Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 12: Ensure sustainable consumption and production patterns. Goal 13: Take urgent action to combat climate change and its impacts
Population and Human Health (PHH)	<ul style="list-style-type: none"> • <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> • Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management • Ensure that existing population and planned growth is matched with the required public infrastructure and the required services 	SOE3 Health and Wellbeing SOE4 Climate SOE5 Air Quality SOE 11 Water Services SOE 12 Circular Economy SOE13 Landuse	Goal 3: Ensure healthy lives and promote well-being for all at all ages. Goal 6: Ensure availability and sustainable management of water and sanitation for all. Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all. Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation. Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 12: Ensure sustainable consumption and production patterns. Goal 13: Take urgent action to combat climate change and its impacts.

	Strategic Environmental Objectives in the Galway County Development Plan 2022-2028	EPA Ireland's Environment 2020	UN Sustainable Development Goals
			Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Biodiversity, Flora and Fauna (BFF)	<ul style="list-style-type: none"> To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species Enhance biodiversity in line with the National Biodiversity Strategy and its targets including no net contribution to biodiversity losses or deterioration.¹ To protect, maintain and conserve the County's natural capita 	SOE 4 Climate SOE 5 Air Quality SOE 6 Nature SEO 8 Marine SOE 11 Water Services SEO 12 Circular Economy SOE 13 Land use	Goal 3: Ensure healthy lives and promote well-being for all at all ages. Goal 6: Ensure availability and sustainable management of water and sanitation for all. Goal 13: Take urgent action to combat climate change and its impacts. Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. Goal 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

¹ Inserted following submission at Scoping Stage by Department of Housing, Heritage and Local Government

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028		EPA Ireland's Environment 2020	UN Sustainable Development Goals
Soil and Geology (SG)	<ul style="list-style-type: none"> • Protect soils against pollution, and prevent degradation of the soil resource • Promote the sustainable use of infill and brownfield sites over the use of greenfield within the County • Safeguard areas of prime agricultural land and designated geological sites 	SOE4 Climate SOE6 Nature SOE 11 Water Services SOE 12 Water Services SOE13 Landuse	Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 12: Ensure sustainable consumption and production patterns. Goal 13: Take urgent action to combat climate change and its impacts. Goal 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.
Water (W)	<ul style="list-style-type: none"> • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and County growth targets in the context of existing and projected water supply and wastewater capacity constraints ensuring the protection of receiving environments • Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposal 	SOE3 Health and Wellbeing SOE5 Air Quality SOE4 Climate SOE6 Nature SOE 11 Water Services SOE13 Landuse	Goal 6: Ensure availability and sustainable management of water and sanitation for all. Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 13: Take urgent action to combat climate change and its impacts. Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. Goal 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.

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028		EPA Ireland's Environment 2020	UN Sustainable Development Goals
Air and Noise (AN)	<ul style="list-style-type: none"> To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency Promote continuing improvement in air quality Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution Meet Air Quality Directive standards for the protection of human health Significantly decrease noise pollution by 2020 and move closer to WHO recommended level 	SOE3 Health and Wellbeing SOE5 Air Quality SOE4 Climate SOE6 Nature SOE 8 Marine SOE9 Clean Energy SOE 11 Water Services SOE12 Circular Economy SOE13 Landuse	Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all. Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 13: Take urgent action to combat climate change and its impacts.
Material Assets	<ul style="list-style-type: none"> Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, solar, hydro, biomass, energy from waste and traditional fossil fuels Promote the circular economy, reduce waste, and increase energy efficiencies 	SEO3 Health and Wellbeing SOE 5 Air Quality SOE9 Clean Energy SOE 13 Land use SOE 11 Water Services SOE 12 Circular Economy	Goal 6: Ensure availability and sustainable management of water and sanitation for all. Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all. Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Goal 12: Ensure sustainable consumption and production patterns.

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028		EPA Ireland's Environment 2020	UN Sustainable Development Goals
	<ul style="list-style-type: none"> • Ensure there is adequate sewerage and drainage infrastructure in place to support new development • Facilitate, as appropriate, Irish Water in developing water and wastewater infrastructure 		<p>Goal 13: Take urgent action to combat climate change and its impacts.</p> <p>Goal 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>
Cultural Heritage (CH)	<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> <ul style="list-style-type: none"> • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage 	<p>SOE3 Health and Wellbeing SOE 12 Circular Economy SOE13 Landuse</p>	<p>Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.</p> <p>Goal 13: Take urgent action to combat climate change and its impacts.</p>
Landscape	<ul style="list-style-type: none"> • To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention 	<p>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</p>	<p>Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.</p> <p>Goal 13: Take urgent action to combat climate change and its impacts.</p>

4 Summary of current Environmental Baseline in County Galway.

4.1 Introduction

The plan area encompasses County Galway. Therefore, the primary focus of the environmental baseline are the county areas, and depending on the environmental parameter at a larger scale. For example, built heritage might be confined to a street or specific site, whereas water resources such as rivers, lakes, estuaries and coastal waters are far larger in scope and can be influenced by activities at a larger scale or activities upstream. Similarly, mobile species may disperse over larger areas of the landscape and require consideration at County and regional level depending on the species under consideration. The scope of the baseline has been informed by the scoping submissions received.

4.2 Green and Blue Infrastructure and Ecosystem Services

Green infrastructure planning is a successfully tested tool to provide environmental, economic and social benefits through natural solutions. In many cases, it can reduce dependence on 'grey' infrastructure that can be damaging to the environment and biodiversity, and often more expensive to build and maintain. While green infrastructure promotes the amenity and quality of life value of nature within urban settings and is not solely for the benefit of biodiversity, it is noted that it can contribute significantly to the retention and enhancement of ecological connectivity.

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. The European Commission produced a strategy on green infrastructure in 2013. Due to its obligations under the European Landscape Convention, Ireland has prepared the National Landscape Strategy for Ireland 2015-2025, which has significant implications for biodiversity.

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 County 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.

4.2.1 Ecosystem Services

The following section provide a brief overview of the existing ecosystem present in and around the plan area. The NW RESS states the following under Regional Policy Objective 5.6

RPO 5.6 Develop awareness and create a greater appreciation of the benefits of our natural heritage, including on the health, wealth and well-being of the regions ecosystem services.

See **Box 1** below for description of Ecosystem Services and figure 4.2 for graphic of same; whilst **Figure 4.3 to 4.5** presents the NPWS Mapping Ecosystem Services Pilot Project that identifies a number of ecosystem services at plan level. These maps highlight the significant role peat soils and bogs play in ecosystem services at plan level.

BOX 1 ECOSYSTEM SERVICES

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 solutions¹.

FIGURE 4-1 PRINCIPAL ECOSYSTEM SERVICES



¹ https://ec.europa.eu/environment/nature/ecosystems/index_en.htm

FIGURE 4-2 ECOSYSTEM SERVICES CARBON IN SOIL

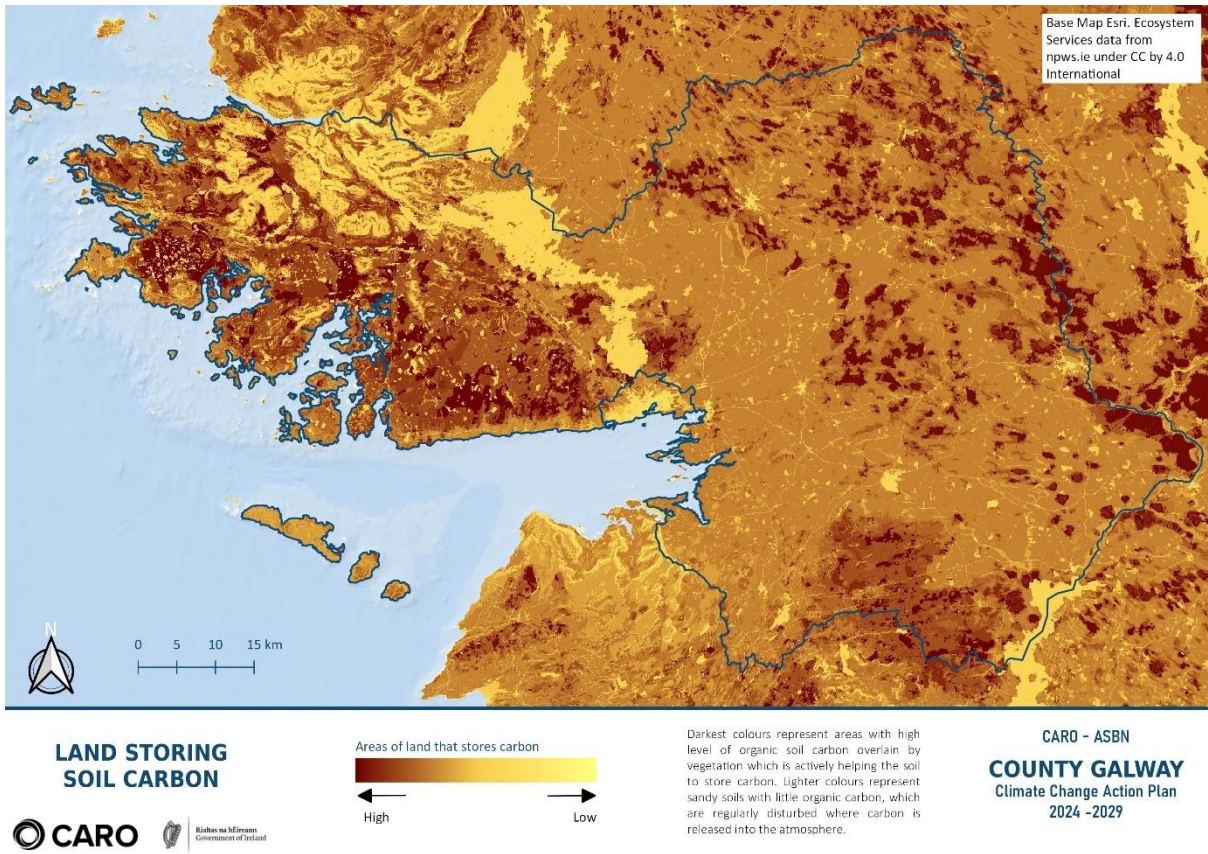


FIGURE 4-3 ECOSYSTEM SERVICES WATER RETENTION

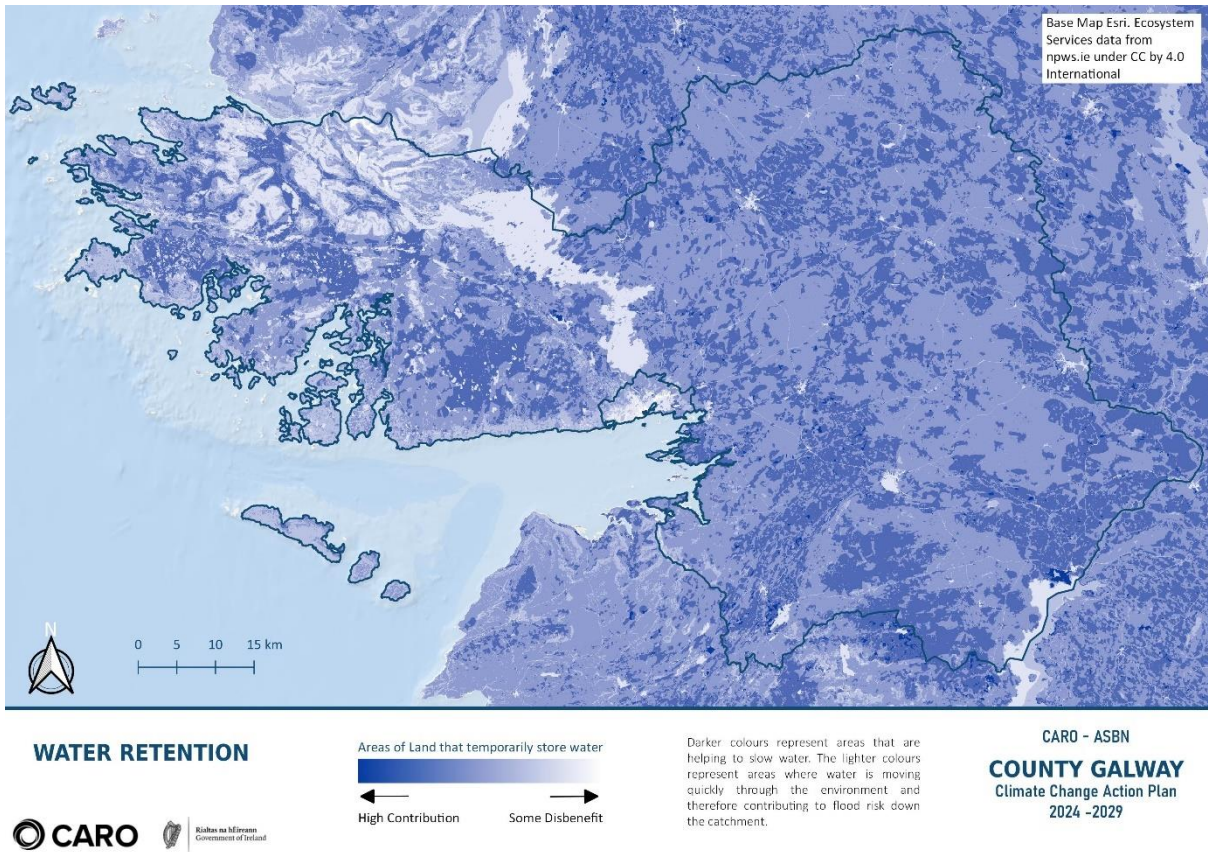
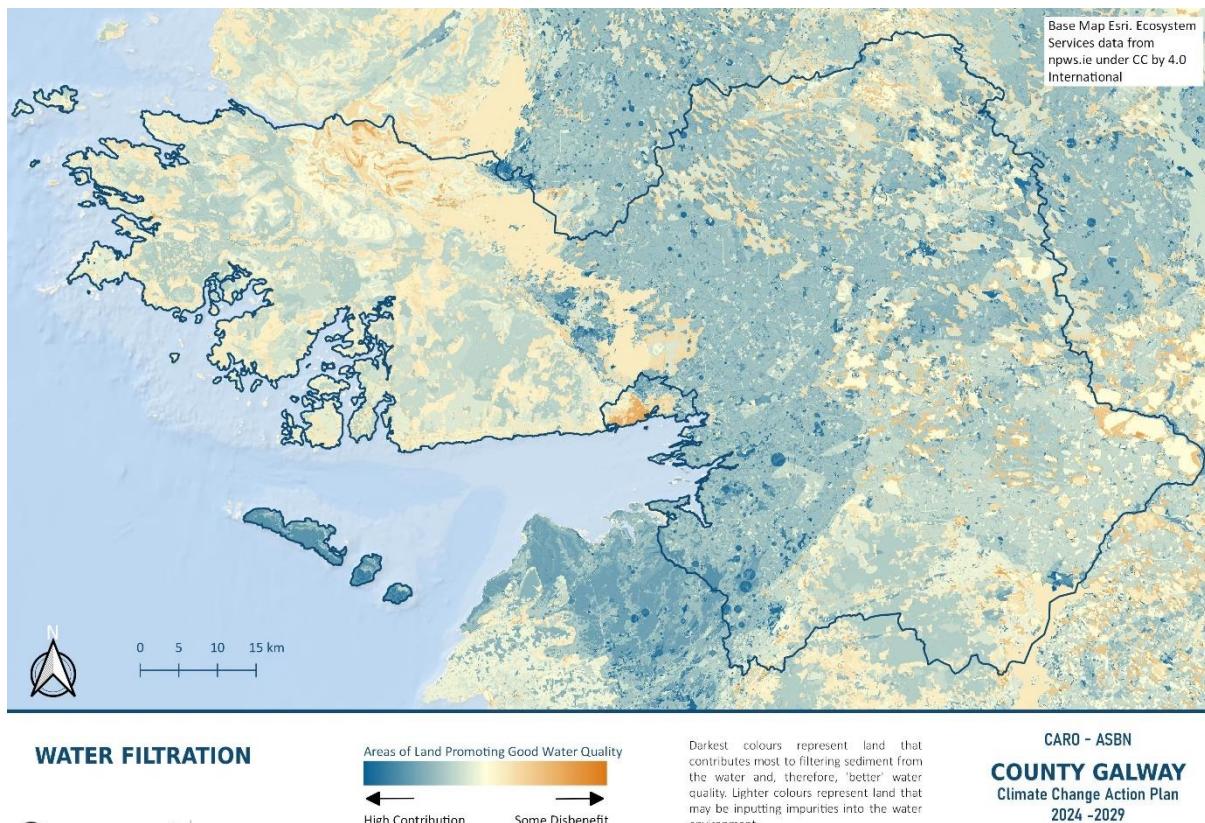


FIGURE 4-4 ECOSYSTEM SERVICES WATER FILTRATION



4.3 Biodiversity, flora and fauna

4.3.1 Designated sites

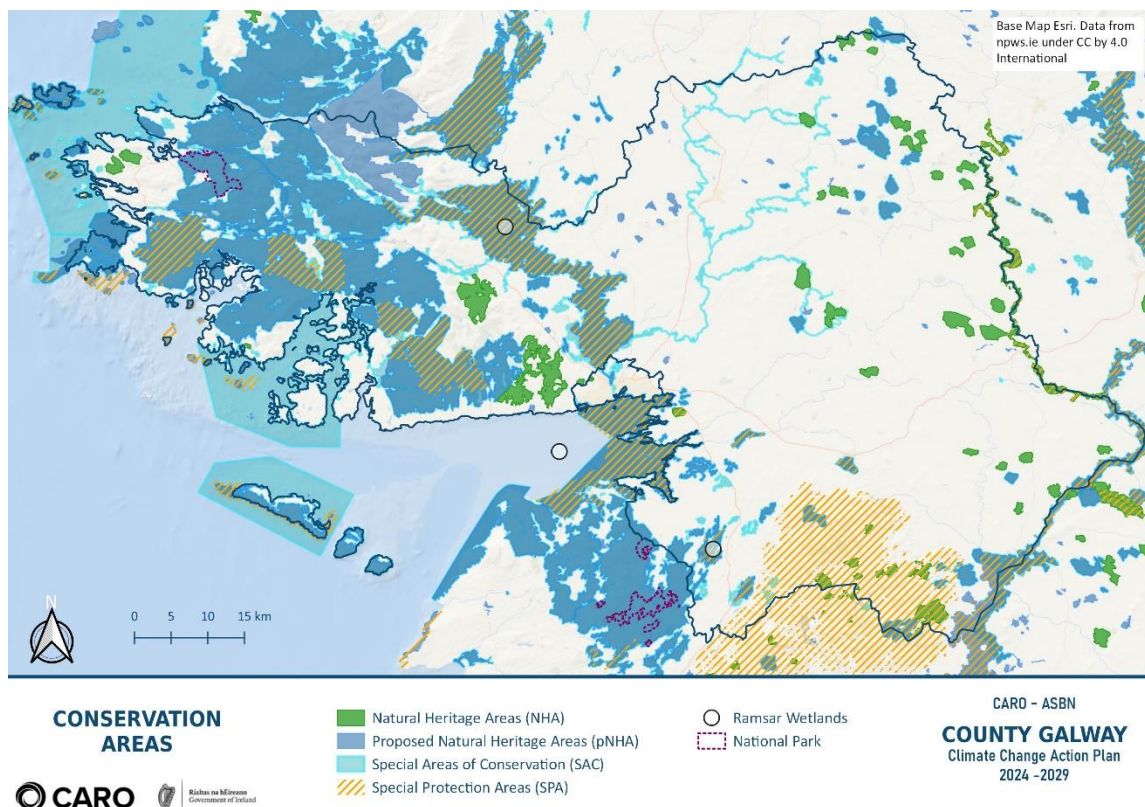
The plan area is rich in biodiversity, containing many important, and protected, habitats and species such as Galway Bay, lakes, turloughs, eskers, fens, peatlands, wetlands, woodlands, bats, wildfowl (duck and geese), waders, salmon, lamprey and otters. However, it also contains many other habitats which are not protected such as scrub, parks, streams, hedgerows, tree lines, roadside verges, housing estate open spaces and gardens. It is these locally important habitats and species within the landscape, including extensive areas of wetland, fens, broadleaf woodlands, grasslands and turloughs, which provide links between the more rare and protected habitats, and are essential for the migration, dispersal and genetic exchange of wild plants and animals such as garden birds (robins, wrens, finches, etc.) and migrant summer visitors (swallows, cuckoos, warblers, etc), otters, hedgehogs, bats, pigmy shrew and other Irish mammals, lamprey, salmon and other fish species, and a variety of invertebrates, including beetles, bees, butterflies, dragonflies and damselflies. They also allow for the spread of seeds, which benefit the wildflower populations of County Galway. It is recognised that many rare and protected species are reliant on locally important species, and as such the protection of common habitats and species should not be underestimated.

Natural Heritage Areas also have a significant role in supporting the species using Natura 2000 sites mainly relating to mobile fauna such as mammals and birds which may use pNHAs and NHAs as “stepping stones” between Natura 2000 sites. Article 10 of the Habitats Directive and the Habitats Regulations 2011, place a high degree of importance on such non-Natura 2000 areas as features that connect the Natura 2000 network. Features such as ponds, woodlands and important hedgerows form key “stepping stones”.

Special Areas of Conservation (SACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) - referred to as the Habitats Directive. The integrity of a European Site (referred to in Article 6.3 of the EU Habitats Directive) is determined based on the conservation status of the qualifying features of the SAC. The qualifying features for the designated sites have been obtained through a review of the Conservation Objectives available from the National Parks and Wildlife Service (NPWS). Few Natura 2000 sites are exclusively designated or classified in consideration of terrestrial or aquatic qualifying interests; many consist of a combination of terrestrial, freshwater and marine habitats and species. In the natural environment also there is considerable overlap between terrestrial and aquatic fauna and flora, with each co-existing and co-reliant in many cases. A full assessment of the Plan against the qualifying interests and conservation objectives of the designated sites is undertaken throughout the appropriate assessment process which has been undertaken in conjunction with the Plan and SEA processes and is presented in the Natura Impact Statement.

These habitats also provide other important ecosystem services such as carbon sequestration, flood attenuation, water filtration, and recreation. There are a number of other sites across the County that have been designated for environmental and/or ecological protection. These include Ramsar sites, Nature Reserves and Wildfowl Sanctuaries, including the Clochar na gCon/Bealacoan Bog Nature Reserve and the Derryclare Nature Reserve. These are areas of huge importance for the protection of biodiversity at a local level and also in the provision of amenity and educational resource. See **Figure 4.5** for principal designated sites.

FIGURE 4-5 DESIGNATED CONSERVATION SITES



4.3.2 Peatlands and wetlands

The following section summarises these key habitats which are essential in terms of climate change adaptation and mitigation as well as providing numerous services and space for nature.

Peat soils cover 20.6% of the national land area. In County Galway, upland blanket bog is found in mountainous regions and lowland/Atlantic blanket bog is found in the Conamara lowlands and coastal areas. Raised bogs are found in the lowlands of north and east County Galway.

Active blanket bogs and active raised bogs are considered to be priority habitats, listed on Annex I of the EU Habitats Directive. Ombrotrophic (rain-fed) and minerotrophic (groundwater-fed) peat soils are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues. Many of these peat areas are also subject to ecological designations.

Bogs and heath support a wealth of wildlife. Several birds of conservation importance such as Greenland white-fronted geese, golden plover, dunlin, curlew, merlin and red grouse use the bogs and occur in Galway. The Irish hare is widespread on many of the county's peatlands. Butterflies such as the very rare marsh fritillary and numerous species of moths can also be found on Galway's bogs.

Whilst many of the bogs are protected through their designation as National Heritage Areas under the Wildlife Amendment Act, there are other areas that are not protected which lie outside of the NHA designation. The aim of the National Raised Bog SAC Management Plan (2017-2022) sets out to provide clarity to all parties regarding how these sites will be managed and restored into the future in co-operation with land-owners and local communities and in keeping with legal obligations.¹

A wetland is an area that is saturated by water and this saturation has allowed specially adapted plants and animals to establish. As part of the project to map Ireland's wetlands, a preliminary mapping project of all wetlands (both known and potential wetland sites) in County Galway has been completed. Many of these are regarded as being internationally important. Wetlands are effectively the border between the open water and dry land. Reeds, sedges, water forget-me-not, marsh marigold and purple loosestrife provide cover for ducks and wading birds. Other wetlands, such as bogs, heath and fens, occur where the water table is close to the surface, or where the bedrock is impenetrable. Wetlands, such as fens and bogs, only retain carbon if they are moist. Therefore, when a bog or fen is drained or infilled, they become major carbon sources, releasing huge quantities of carbon dioxide into the atmosphere as the peat decays and oxidises. In addition, the changing conditions result in the loss of water dependant species. Changes in water quality as a result of pollution (from surface run-off, WWTPs etc.) also significantly impact wetlands.

The value of wetlands include their function in improving water quality, for floodwater storage whereby they can slow down the force of flood and storm waters as they travel downstream; habitat for wildlife; support biodiversity; provide valuable open space and create recreational opportunities; are vital for preventing further climate change by acting as carbon storage and are part of cultural heritage.²

There are many wetland areas in the county, many of which are protected under national or European designations in the form of SACs, SPAs, NHAs. There are many more wetland areas outside of designated sites as well as potential wetland sites which, due to geology and hydrogeology of the area, include turloughs some of which only become visible during the wetter winter months. In addition, there are significant areas of *cladium* fen (priority Annex habitat) in the County.

4.3.3 Woodland habitat

Ancient woodlands are considered to be those which are established and had continuous cover before afforestation and planting became common practice in Ireland. Ancient woodlands are vulnerable to impacts from clearing and sensitive due to their age and habitat types associated with

¹ www.ipcc.ie and www.wetlands.ie

² <http://www.wetlandssurveysireland.com/>

them. There are 124 native woodlands within the County¹. Ancient woodlands are considered to be those which are established and had continuous cover before afforestation and planting became common practice in Ireland. Ancient woodlands are vulnerable to impacts from clearing and sensitive due to their age and habitat types associated with them. A provisional inventory of ancient woodlands undertaken by the NPWS shows that there are 198 within the County.

Hedgerows are an important feature of the Galway landscape and an integral part of the rural environmental fabric, especially in the south and east of the county. The county's hedgerow network is valuable not only in terms of agriculture, landscape and biodiversity—facilitating the movement of wild flora and fauna, acting as ecological corridors between habitat features, but functions to filter pollution, improve water quality and sequester carbon. A survey of East Galway hedgerows was undertaken in 2006². The results indicate that East Galway has an extensive network of hedgerows with an estimated length of 22,256km. While there is a relatively diverse range of shrub and tree species found in hedgerows, only 14.7% of hedges sampled can be described as species-rich based on the floristic composition of the shrub layer. In general roadside hedgerows are more species-rich and therefore should be afforded a higher level of protection.

Five hedgerow 'types' were identified based on the floristic composition of the shrubby hedge layer. These included gorse-dominated hedges, species-poor hawthorn dominated hedges, hedges characterised by the presence of holly, hedges characterised by the presence of hazel and/or spindle, and hedges with a significant willow component. These hedgerow types roughly correspond to groups identified in other counties. Many of the hedgerows in east Galway appear to be largely unmanaged or are poorly managed, and without intervention will eventually become tree lines, thus changing their ecological value and agricultural function. The large and bushy structure of many of the hedges surveyed, however, undoubtedly leads to a high wildlife value. Given the age of this survey an updated survey would be beneficial to understand changes to hedgerows and identify opportunity for creation of new wildlife corridors.

4.3.4 Coastal habitats

The Galway coastline encompasses the entire western border of County Galway (approx. 2000km in total) from Aughinish Bay to Killary harbour as well as the Aran Islands, Inishbofin and several small uninhabited islands around coast. There are many different types of coastal habitats including: habitats below the high tide line: shore – mud flats, sand flats, and gravel and shingle beaches; habitats subject to periodic inundation by sea water including salt marshes and lagoons; terrestrial coastal habitats: sea cliffs, sand dunes, machair. Many of these habitats are internationally important for nature conservation and several support important bird colonies and fish nursery grounds around the Galway coast³.

Transitional and coastal waters are, in general of high and good status.

4.3.5 Protected species and habitats outside protected sites

Habitat mapping, bat surveys and tree surveys have helped to identify habitats and species which occur outside of designated sites, but which are protected under European and National legislation. These include cladium fens, turloughs and other wetlands, oak-ash-hazel woodland, and riparian woodland, among others. These were also used to inform the assessment.

County Galway hosts several rare, protected and/or threatened plant and animal species. Many of these are listed in Annex II of the EU Habitats Directive and EU Birds Directive including: Otter (*Lutra*

¹ NPWS Native Woodlands Survey 2003-2008

² East Galway Hedgerow Survey (2006) Fuller, J.

³ [Biodiversity in County Galway - People and Nature \(galwaycommunityheritage.org\)](http://galwaycommunityheritage.org)

lutra), Irish Hare (*Lepidus timidus hibernicus*), Red Deer (*Cervus elaphus*), Badger (*Meles meles*), and Atlantic salmon (*Salmo salar*). Other species are protected under Annex V of the former directive (animal and plant species whose taking in the wild and exploitation may be subject to management measures) and include *Rana temporaria* and *Phoca vitulina* while Annex IV species (animal and plant species in need of strict protection) include *Lutra lutra* and *Najas flexilis*.

Galway contains six other catchments which are identified as freshwater pearl mussel Sensitive Areas by National Parks and Wildlife Service this are as follows;

- Ballynahinch - Inagh Lough
- Ballynahinch - Ballynahinch Lake
- Ballynahinch – Caher
- Knock
- Shannon – Woodford
- Shannon - Graney / Scariff

These margaritifera sensitive areas contain catchments of other extant populations or catchments with previous records. The potential effects of any plans, developments or activities on the populations, including the potential to cause ‘environmental damage’ as per the Environmental Liability Directive and Regulations, must be determined through SEA, EIA or other ecological assessment.

The vulnerable status of other species is highlighted by their inclusion and classification in the Irish Red Data Book, which utilises IUCN categories with the principal aim of identifying those species most in need of conservation interventions. Species recorded in Galway and their current Irish status includes Atlantic Salmon *Salmo salar* (vulnerable), and Common frog *Rana temporaria* (least concern).

The Wildlife Acts, 1976 and 2000 are to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims. It includes a diverse range of wild birds, land and marine mammals and amphibians. Protected plants are those that are legally protected under the Flora Protection Order, 2015.

4.3.6 Invasive species

The EU adopted “Regulations on the prevention and management of the introduction and spread of invasive non-native species” (2013/0307(COD)) came into force on the 1st of January 2015. This regulation seeks to address the problem of invasive species in a comprehensive manner so as to protect native biodiversity and ecosystem services, as well as to minimize and mitigate the human health or economic impacts that these species can have. The Regulation foresees three types of interventions; prevention, early detection and rapid eradication, and management.

Some species of aquatic and terrestrial invasive flora and fauna which specifically pertain to Galway include; *Gunnera tinctoria* (giant rhubarb), *Gunnera manicata* (Brazilian giant rhubarb), *Lagarosiphon major* (African curly waterweed), *Centranthus ruber* (red valerian), *Fallopia japonica* (Japanese knotweed), *Rhododendron ponticum* (rhododendron), *Heracleum mantegazzianum* (giant hogweed), *Neovison vison* (American mink), *Corbicula fluminea* (Asian river clam),), *Dreissena polymorpha* (zebra mussel).

4.3.7 Key Biodiversity Flora and Fauna Issues relating to the Climate Action Plan

- Focus is being put on predicting how a changing climate will impact on some of our most threatened species, for example species at the range limits. Combined with change landuse

patterns and activities most recently research (2023¹) record a decline in range and abundance or both of native plant species with native grassland species suffering the greatest decline. Lakes and wetlands have also been affected; some lakes are now dominated by the few aquatic plants favoured by nutrient enrichment, such as the introduced Nuttall's Pondweed. Many peatbogs have been planted with conifers or converted to agriculture, excluding the native bog plants such as heathers and sundew. Peatland habitats are important for carbon storage, and their restoration is essential as part of our efforts to combat climate change. There is evidence that climate change may have affected the Irish flora by helping some southern species to spread northwards,

- In contrast, the overwhelming majority (80%) of species introduced into Ireland since 1500 have increased. Most of these non-native species are benign but some, such as Himalayan Balsam and Rhododendron, have become invasive, with a negative impact on the native flora.
- Alternative energy options are being explored in the County. A common concern in relation to wind energy developments relates to impacts on peat soils and hydrogeology, impacts on bird species, and habitat disturbance and in particular the effects on the freshwater pearl mussel as an Annex species.
- Ammonia (NH₃) is a colourless, pungent-smelling and corrosive gas that is produced by the decay of organic vegetable matter and from the excrement of humans and animals. When released into the atmosphere, ammonia contributes to the level of air pollution. The agricultural sector continues to be the overwhelming contributor to ammonia emissions in the EU. The National Emission reduction Commitments Directive (NEC Directive) sets national emission reduction commitments for Member States and the EU for five important air pollutants, including ammonia. Potential effects on the impact of atmospheric ammonia and nitrogen deposition associated with biogas production/anaerobic digesters on sensitive nature conservation sites in particular peat habitats is a potential issue.²
- In County Galway one of the most prevalent impacts of climate change in recent years has been the increase in flood events. Management of flood-related issues is therefore of critical importance to the future sustainable development of the county.
- Coastal erosion is another prevalent impact of climate change in the county. There is firm evidence that rising sea-levels and increasing storm frequency and wave energy can increase the rate of erosion and the incidence of storm and flood-related events (e.g. land-ward incursion, wave damage, flooding). Over a period of decades, this will inevitably lead to loss or modification of some coastal habitats and interference with human use of the coastal zone.
- Of the 94 identified ecological processes³, across terrestrial, marine and freshwater ecosystems, that underpin ecosystem functioning and support services to people, 82% showed evidence of impact from climate change The observed and projected climate change impacts on Ireland's biodiversity can be categorised into four broad categories:
 - a) Changes in phenology (the timing of lifecycle events);
 - b) Changes in the geographical range of species;
 - c) Increased degradation of habitats and changes in ecosystem processes;
 - d) Increased occurrence of invasive species;

Previous extreme weather events that have impacted on biodiversity include the extended cold spell of 2010 which led to Wintering Wildfowl Starving and Birds Freezing in Roosts on Shannon and Little Brosna callows. Exceptionally dry summer of 2018 resulted in numerous (50 estimated) large and smaller fires on upland and hill areas⁴.

¹ Botanical society of Britain and Ireland Plant Atlas 2020. [BSBI-Plant-Atlas-2020-press-release-Ireland-FINAL.pdf](#)

² Raised by the Dept Housing Heritage and Local Government in SEA Scoping submission

³ Biodiversity Climate change sectoral adaptation plan NPWS 2019

⁴

4.3.8 SEA recommendations:

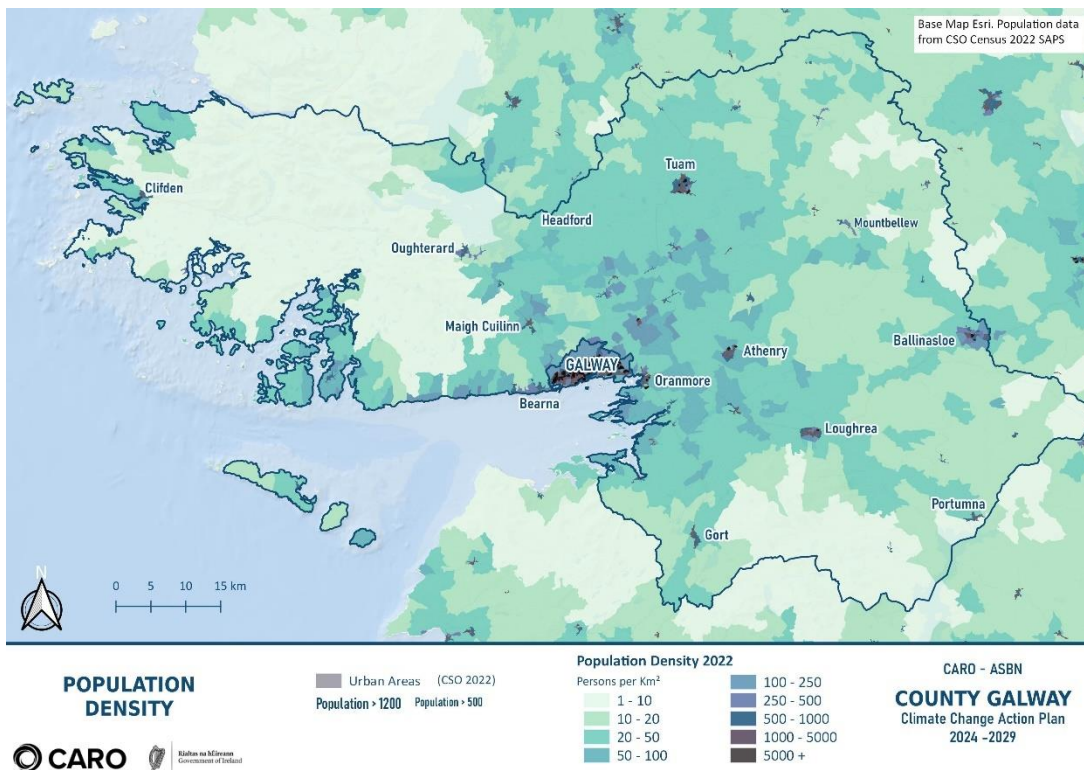
- Clear and measurable actions to address nature based solutions to support co benefits and ecologically driven responses to interventions around climate change impacts, mitigation and adaptation.
- Actions to address and respond to invasive species.
- Creating space for nature at landscape scale to facilitate mobile species.
- Research into interactions between climate change on soil, water, air and biodiversity.

4.4 Population and Human Health

As of the 2022 Census, Galway County has a population of 192,995 people which represented a 13,605 increase since the previous census in 2016. The county has experienced relatively steady population growth over recent years and has an almost equal gender breakdown. The Galway Gaeltacht and Islands covers extensive parts of the county and the county accounts for approximately 49.7% of the national Gaeltacht population (2016). Galway county comprises of 5 municipal districts and the most populous town in the 2016 census was Tuam at 8,767 (the town was designated as a county Hub under the Regional Spatial and Economic Strategy (RSES). Other large towns include Ballinasloe, Loughrea, Oranmore, Athenry, Gort, Clifden, Bearna, Portu mna, Oughterard and Moycullen. Under the RSES strategy, Oranmore-Athenry has been identified as a strategic industrial corridor.

The population growth projections for the County, as set out by the NPF and RSES, are 300,000-308,500 persons by 2026 and further growth by 14,000 persons by 2031. Chapter Two of the Galway County Development Plan sets out overall population growth of 18,655 to 2028, and 27,055 up to 2031. County Galway's Key Towns include: Tuam, with population of 8,767 persons (Census 2016); and Ballinasloe, with population of 6,662 persons (Census 2016). These towns have population targets under the draft Galway CDP as 1,999 and 2,630 respectively over the lifetime of the Galway CDP. Key Towns provide important connections with adjoining regions and have the capacity and future growth potential to accommodate above average growth in tandem with the requisite investment in employment creation, services, amenities and sustainable transport. **Figure 4.6** presents the population density at plan level based on the 2022 Census data.

FIGURE 4-6 POPULATION DENSITY



4.4.1 Human Health

Impacts can arise on people’s health and quality of life from a range of environmental factors, often through a combination of environmental impacts such as landuse, water quality, air quality, noise and transport patterns. Many of these may be exacerbated from climate change effects and impacts. The exposure to contaminants or pollutants can have serious implications for human health. Potential impacts on population and human health include inadequate water and wastewater and waste infrastructure, contamination of soils, excessive noise, flooding and poor air quality in areas where there are large volumes of traffic. The Institute of Public Health states:

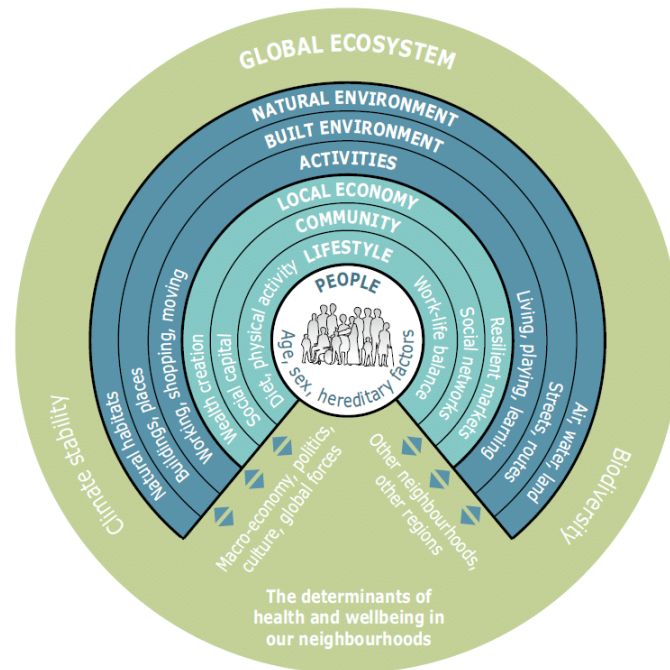
‘Where people live affects their health. There are a number of elements of the living environment that influence health including the built environment, travel choices and the communities in which people live. The design, maintenance and location of buildings influence health. Similarly, public spaces and transport networks can facilitate health by providing opportunities for physical activity, social interaction and access to social goods’.

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 & spleen¹Children, 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

¹ Life Emerald 2023.

water services, energy, transport) , and water quality as well as access to green and blue space. Figure 4.7 below identifies key factors that contribute to human health.

FIGURE 4-7 THE DETERMINANTS OF HEALTH AND WELL-BEING IN OUR NEIGHBOURHOODS¹



4.4.2 Key Population and Human Health Issues relating to the Climate Action Plan

- Climate² change can influence health through altering exposure to stressors such as extreme weather events; vector-, food- and waterborne infectious diseases; changes in the quality and safety of air, food, and water; and stresses to mental health and wellbeing.
- Exposures that result from climate change can be categorised as exposures with direct health impacts (e.g. storm, drought, flood, heat wave, temperature change, wildfires) or exposures with indirect health impacts (e.g. water quality, air quality, land use change, ecological change).
- The extent to which exposures which result from climate change impacts on health will be influenced by mediating factors. These include: individual or social factors such as demographics, socio-economics, health status, access to care, conflict. environmental factors for example geography, baseline weather, air and water quality, vegetation. institutional capacity such as primary health care, warning systems.
- The potential climate change impacts on health are wide ranging such as deaths, injuries, respiratory disease, heat stroke, poisoning, water-borne diseases, infectious diseases, under nutrition, mental illness. These can include direct impacts (eg drowning), vector borne and other infectious diseases such as Lyme disease, impacts arising from air quality in terms of respiratory diseases, impacts to infrastructure with accompanying health impacts such as contaminated water, and water services.
- Health gains can occur from key climate change actions (“co-benefits”) such as: increasing consumption of diets with low greenhouse gas emissions and improving agriculture and good waste practices. Reducing co-pollutants from household solid fuel combustion, better lighting and application of passive design principles. Reducing greenhouse gases and associated co-pollutants from industrial sources. Increasing energy efficiency, reducing

¹ SOURCE: HUMAN ECOLOGY MODEL OF A SETTLEMENT, BARTON AND GRANT, 2006

² Health Impacts of Climate Change and the Health Benefits of Climate Change Action: A Review of the Literature A Department of Health Research Paper, 2019.

demand for fossil fuels and increasing demand renewable energy. Increasing green areas in urban spaces. Increasing active travel, modifications to public transport and to the built environment.

- EPA (2023) research¹ identified that people in Ireland feel that ‘others’ - such as future generations or people far away - are more threatened by climate change than themselves in the here and now. This means that many people underestimate the immediate risks and already-occurring effects of climate change here in Ireland. The youngest adults (18-24 years) consistently exhibit significantly higher levels of concern, with young women most concerned about climate change. People in Ireland support climate change policies. Where opposition to climate policies arise, it appears to be driven by practical concerns, rather than by scepticism or suspicion of the science of climate change. 79% of respondents in County Galway were worried about climate change, this represents an estimated 39,188 out of a population of 49,574 adults.

4.4.3 SEA Recommendations

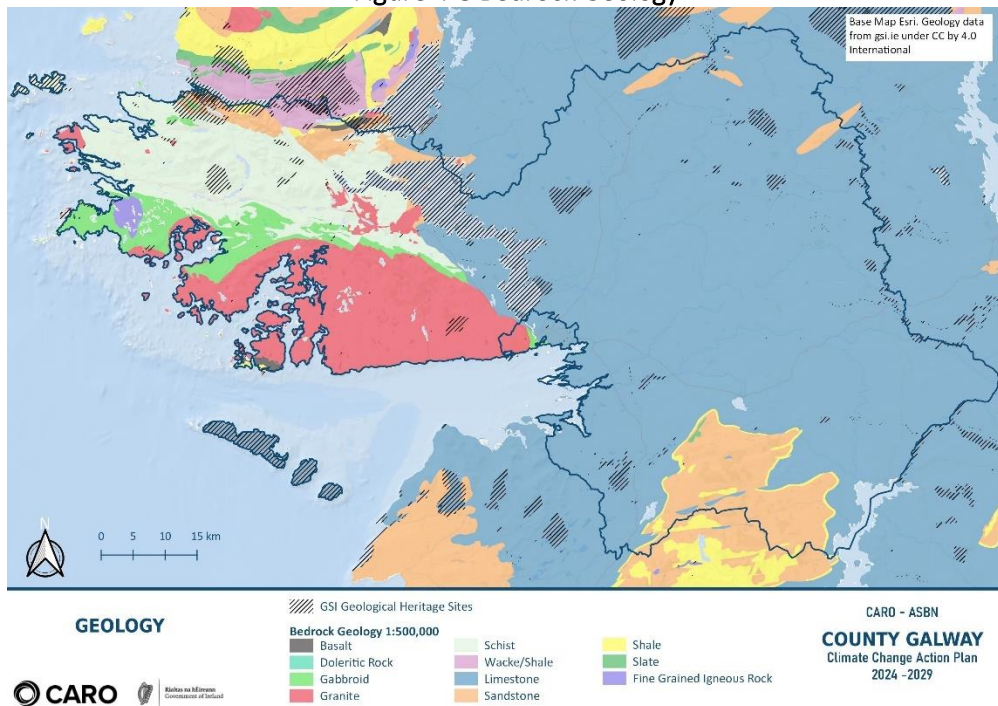
- Actions to support community awareness, engagement and ownership of climate change impacts, mitigation and adaptation.
- Enhanced placemaking through nature based solutions as an adaptive measures and support for active travel and modal shift.
- Support for energy efficiency in the built environment and circular economy.
- Research and support on appropriate landuse activities in the appropriate environment.
- Key focus on groups and demographics more vulnerable to impacts of climate change and support in terms of addressing fuel poverty, access to local food and public transport.
- Investigate and promote the potential and pivotal role creativity can play in addressing the challenges presented by climate action. Just Transition mechanisms and access to support for same.

4.5 Geology and Soils

Galway has some of the most complex geology in the whole of Ireland. Ancient metamorphic rocks such as schist and gneiss occur through Connemara from Galway City to Inishbofin. The whole of Connemara is a very big structure with massive folds. It is part of the Dalradian sequence that also occurs in North Mayo, Donegal and through into western Scotland. There are even older Precambrian rocks in a very few places exposed by massive faults. Many large areas, such as Connemara, are defined as terranes. The Twelve Bens of Connemara are made of metamorphosed sandstone, which is quartzite. They form hills because they are more resistant to erosion over long periods than the other rocks. Runn The Galway Granite is found in south Connemara from Galway City through to Roundstone. It is not one single rock type but was formed by the intrusion of nine or so large granite masses (called batholiths or plutons) along the base of the hills are areas of metamorphosed limestone, which is marble. Virtually all of Galway east of the city is covered by limestone. In the Aran Islands, the terrain is more like the Burren, with the only evidence of glaciations being some odd boulders of Galway Granite on the bare limestone pavementsee **Figure 4.8** for bedrock geology, and geological heritage sites.

¹ Climate Change in the Irish Mind - Support for Climate Policies'and Climate Change in the Irish Mind - Climate Risk Perceptions. <https://www.epa.ie/news-releases/news-releases-2023/people-in-ireland-support-climate-policies-with-some-opposition-specific-to-local-concerns-and-issues.php>

Figure 4-8 Bedrock Geology



Soils have a number of functions including supporting plant life and life within the soil, biogeochemical cycling of elements, energy cycles, water storage and exchange and ecosystem productivity. Soil formation occurs over very long timescales and can be considered a non-renewable resource. Brown earths (occupying most of the eastern and central areas of the County) and blanket peat and peaty soils (mainly in the north-western upland areas of the County) are the two most dominant soil types in County Galway. Raised bogs and cutaway raised bogs are found mainly in the eastern areas of the County with blanket bog common to the west of the Corrib. Soils have a number of functions including supporting plant life and life within the soil, biogeochemical cycling of elements, energy cycles, water storage and exchange and ecosystem productivity. Soil formation occurs over very long timescales, and can be considered a non-renewable resource.

“Soil provides critical ecosystem and environmental services (Carilli, 2014; Agrilinks, 2019; Renforth and Campbell, 2021) that maintain key components of global climate and biodiversity (Hector et al., 1999; Kleijn and Sutherland, 2003; Gessner et al., 2010; Isbell et al., 2011; Doula and Sarris, 2016). Soil directly impacts biomass production, habitat diversity, biodiversity and the storage of many elements (e.g. carbon, nitrogen) and substances (e.g. water, organic matter; EC, 2017). From a socioeconomic perspective, soil underpins the security of the global food chain for people and animals, the production of fibre, environments that promote health and well-being (Bevik et al., 2020), and a potential nature-based solution to help mitigate the impacts of flooding and climate change. Soils are central to the discussion of topical issues such as carbon sequestration, nutrient availability, pollution, remediation and equitable economic development. Soil quality (the characteristics and dynamics of soil physical properties, chemistry and biology; Wander et al., 2019) and soil health (the functional ability of soil to provide ecosystem services and management outcomes; Wander et al., 2019) should therefore be key elements of any policy framework relating to soils and soil management.¹”

¹ A Signpost for Soil Policy in Ireland MUCKISOILS (Mapping Understanding and Current Knowledge of Irish Soils) (2021-NE-1029) EPA Research Evidence Synthesis Report UCC. Page 1.

Figures 4.9 and 4.10 present principal soil types at plan level, as well as the mapping of high value nature farmland.

FIGURE 4-9 SOIL TYPE

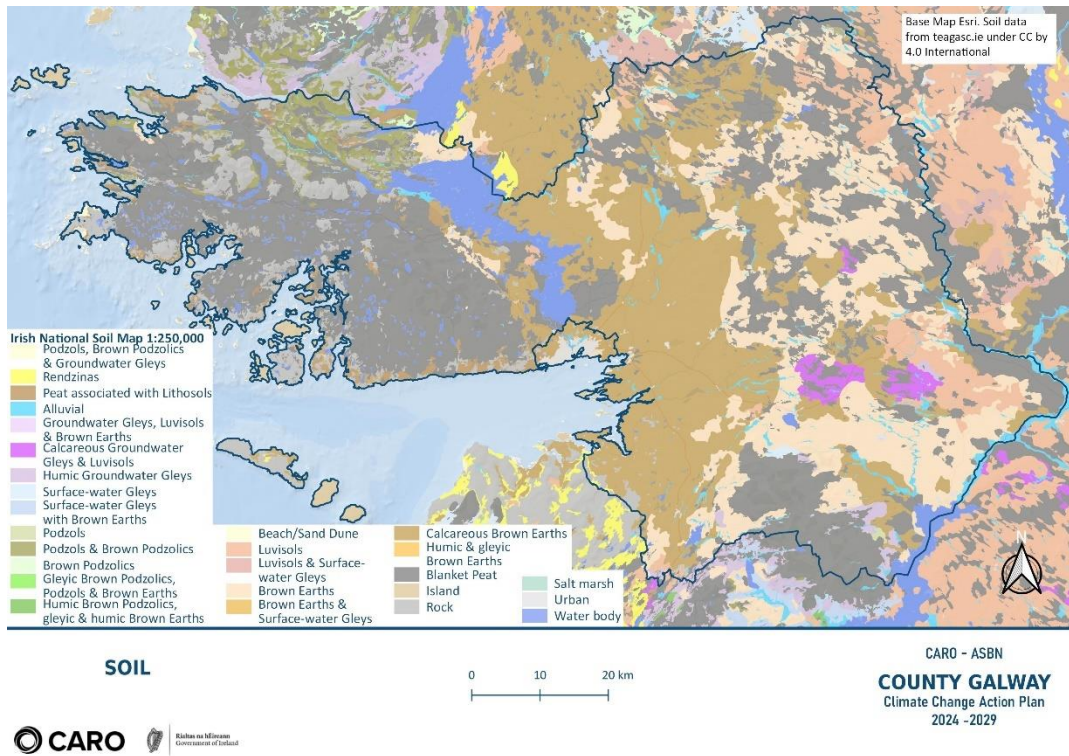
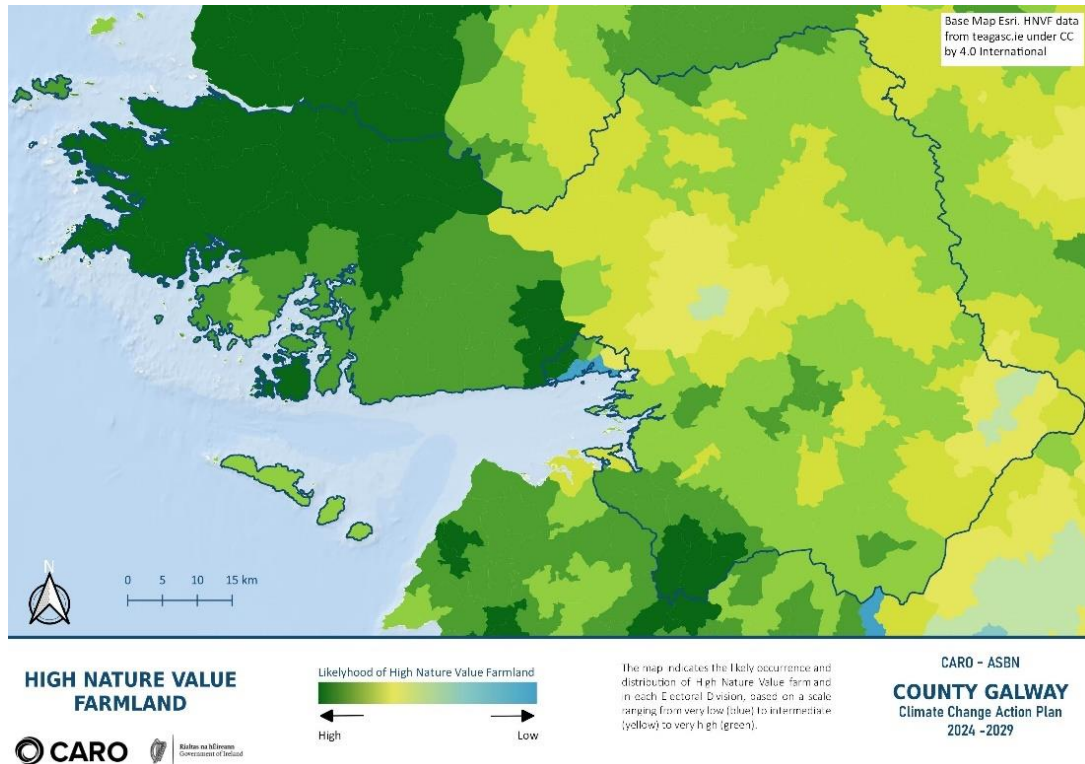
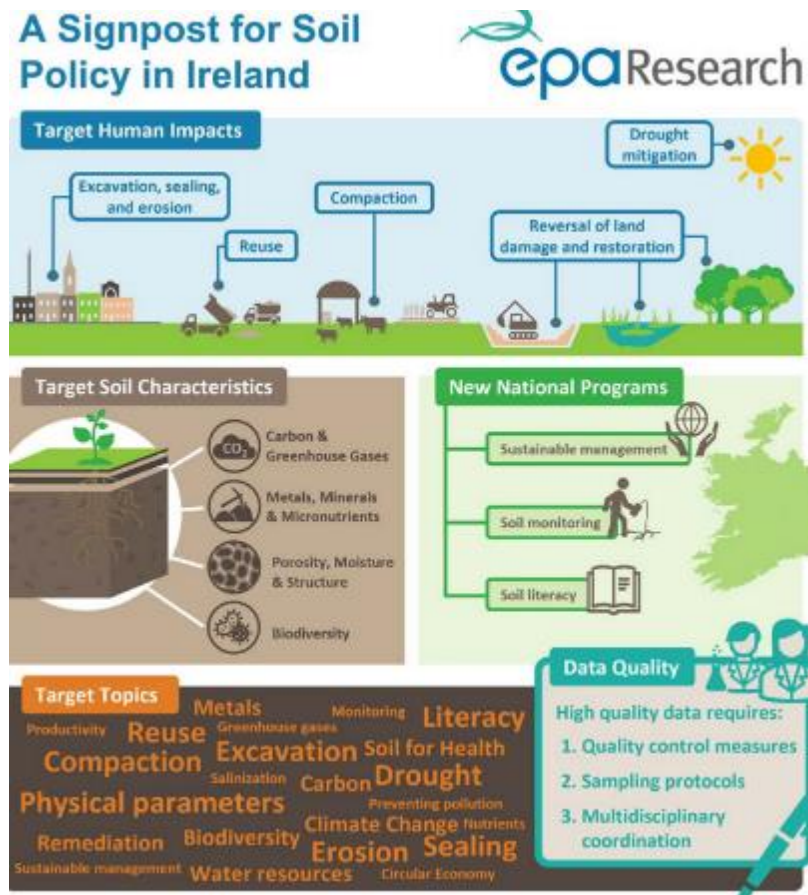


FIGURE 4-10 HIGH VALUE NATURE FARMLAND



EPA research has identified significant research gaps relating to soil in Ireland in terms of themes identified under the EU Soil Strategy for 2030 and this research has identified a signpost for soil policy in Ireland, presented below in **Figure 4.11** which has particular relevant to climate action.

FIGURE 4-11 SIGNPOST FOR SOIL POLICY IN IRELAND



4.5.1 Key Geology and Soil Issues relating to the Climate Action Plan

Significant changes to soil condition can be brought about by the impacts of climate change including changes in air temperature, precipitation and extreme weather events – increased occurrences of summer droughts and increased winter rainfall. The potential impacts of these weather changes are likely to be experienced most significantly in relation to agriculture, peatland areas and forestry areas as well as increasing the potential for flood risk. Drier summers could also require necessary infrastructural investment to store winter rain and the drying out of soils in response to climate change could result in deterioration of soil quality. Increased rainfall could cause increase soil erosion and run off. Other significant issues include:

- Maintaining and enhancing soil function and its carbon storage role where possible, recognising the essential role soils, and particularly functioning peatlands can contribute to climate change mitigation and adaptation.
- Addressing extent of soil sealing, increased surface run off and variable permeability of lands in the plan area.
- Retention and creation of areas of greenfield in terms of open space, green infrastructure, permeability and biodiversity considerations.
- Because of the complex interrelationship between water, air and soil, declining soil quality can contribute to negative or declining water or air quality and function.
- Significant changes to soil condition can be brought about by the impacts of climate change including changes in air temperature, precipitation and extreme weather events - increased occurrence of summer droughts and increased winter rainfall. The drying out of soils in

response to climate change could result in deterioration of soil quality. In wetter western areas, within which the Plan area lies, increased rainfall could cause increased soil erosion. Generally, a combination of dry summers and wet winters could also result in subsidence and soil heave.

- High nature value farming areas, and key agricultural lands should be considered. Where natural resources are required to support development, these should be carried out as efficiently as possible.

4.5.2 SEA Recommendations

- Supporting research and actions relating to carbon sequestration in soil
- Nature based solutions to provide co benefits including to retention and enhancement of soil quality and soil diversity
- Reuse of brownfield lands and support for circular economy through adaptive reuse of buildings and waste streams
- Support for sustainable landuse and in particular agricultural and forestry practices.

4.6 Water Resources including flood risk

The Water Framework Directive (WFD) requires the achievement of good status in all waters and that the status of water bodies does not deteriorate.

The Corrib Catchment (code 30) is the main catchment the covers much of the county with smaller catchments of Upper Shannon to the east, Galway Bay East to the south , Galway Bay North towards the west and a small part of the Erriff -Clew Bay catchment north west. Table x below provides a summary description of each catchment:

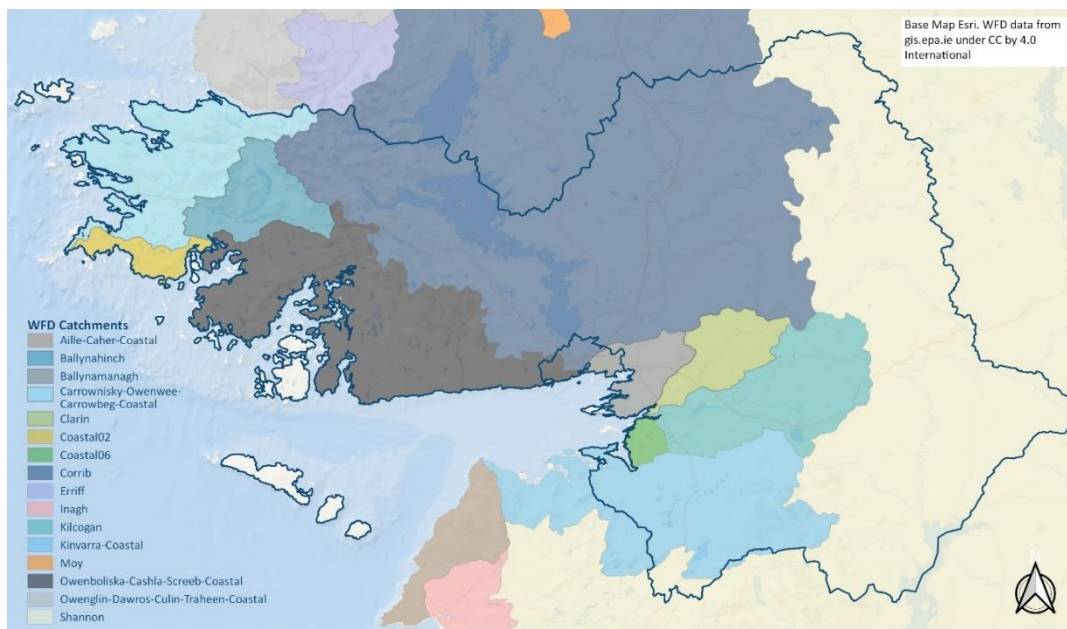
TABLE 4-1 CATCHMENT SUMMARY (WWW.CATCHMENTS.IE)

Catchment name	Summary
Corrib catchment (30)	This catchment includes the area drained by the River Corrib and all streams entering tidal water between Renmore Point and Nimmo's Pier, Galway, draining a total area of 3,112km ² . The largest urban centre in the catchment is Galway City. The other main urban centres in this catchment are Tuam, Ballinrobe, Claremorris and Ballyhaunis. The total population of the catchment is approximately 116,866 with a population density of 38 people per km ² . 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.
Upper Shannon (26d).	This catchment covers an area of 1,598km ² and is underlain completely by karstified bedrock, apart from some isolated pockets and the most southerly part of the catchment downstream of Ballinasloe. The catchment is dominated by a flat undulating topography and the groundwater and surface water drainage systems are highly interlinked throughout the catchment
Galway Bay East (29)	This catchment includes the area drained by all streams entering tidal water in Galway Bay between Black Head and Renmore Point, Galway, draining a total area of 1,270km ² . The largest urban centre in the catchment is the eastern part of Galway City. The other main urban centres in this catchment are Athenry, Louyghrea, Gort, and Oranmore. The total population of the catchment is approximately 74,365 with a population density of 59 people per km ² . This catchment is predominantly underlain by karstified limestone, including the northern part of the Burren in County Clare, and the groundwater and surface water systems in the area are closely interlinked. Only the southeastern part of the catchment, which is underlain by old red sandstones, does not contain karst and the associated assemblage of springs, swallow holes and numerous caves that dominate the majority of the catchment. There is essentially no natural connected surface drainage network in this catchment west of a line running from Athenry to Craughwell to Gort. Surface drainage is entirely absent in the north Clare part of the catchment. In this area virtually all rainfall in the area enters the

Catchment name	Summary
	bedrock aquifer and makes its way underground a number of groundwater flow routes towards the coast at Ballyvaughan or Kinvara.
Galway Bay North (31)	This catchment includes the area drained by all streams entering tidal water between Nimmo’s Pier and Slyne Head, Co. Galway, draining a total area of 936km ² . The largest urban centre in the catchment is the western part of Galway City. The other main urban centres in this catchment are Bearna and Spiddle. The total population of the catchment is approximately 47,288 with a population density of 51 people per km ² . This catchment includes most of the Connemara region from the hills to the west of Lough Corrib to the western flanks of the Maunturk Mountains and Inagh valley to the Twelve Bens and the wild, lake covered bogland and complex coastline of West Galway. The mountainous northern part of the catchment is underlain by metamorphosed igneous rocks such as quartzite while a band of pale green Connemara marble runs east-west through the region from Oughterard to Clifden. This relatively soft rock has been eroded to provide the few relatively flat floored valleys found in the area and is followed by the line of the main road, the N59 through the catchment. To the south of this line, the geology in the remainder of the catchment is dominated by pink coloured Galway granite.
Erriff Clew Bay (32)	This catchment includes the area drained by the River Erriff and all streams entering tidal water between Slyne Head, County Galway and Corraun Point, Co. Mayo, draining a total area of 1,504km ² . The largest urban centre in the catchment is Westport. The other main urban centres in this catchment are Clifden, Newport and Louisburgh. The total population of the catchment is approximately 23,747 with a population density of 16 people per km ² . The catchment includes many mountainous areas, all of which are underlain by assorted metamorphic rocks. Conversely, the drumlinised lowland area east of Clew Bay is underlain by pure karstified limestones..

Catchments are shown in **Figure 4.12**. Surface water quality and water bodies at risk of not meeting WFD objectives are shown in **Figures 4.13 and 4.14**. Agriculture, urban run off, urban wastewater, hydro morphological and anthropogenic pressures, extractive industry, forestry, domestic wastewater and invasive species are exerting significant pressures affecting WFD ‘At Risk’ waterbodies in Galway.

FIGURE 4-12 WFD CATCHMENT



RIVER CATCHMENTS



0 5 10 15 km

CARO - ASBN
COUNTY GALWAY
Climate Change Action Plan
2024 -2029

FIGURE 4-13 SURFACE WATER QUALITY

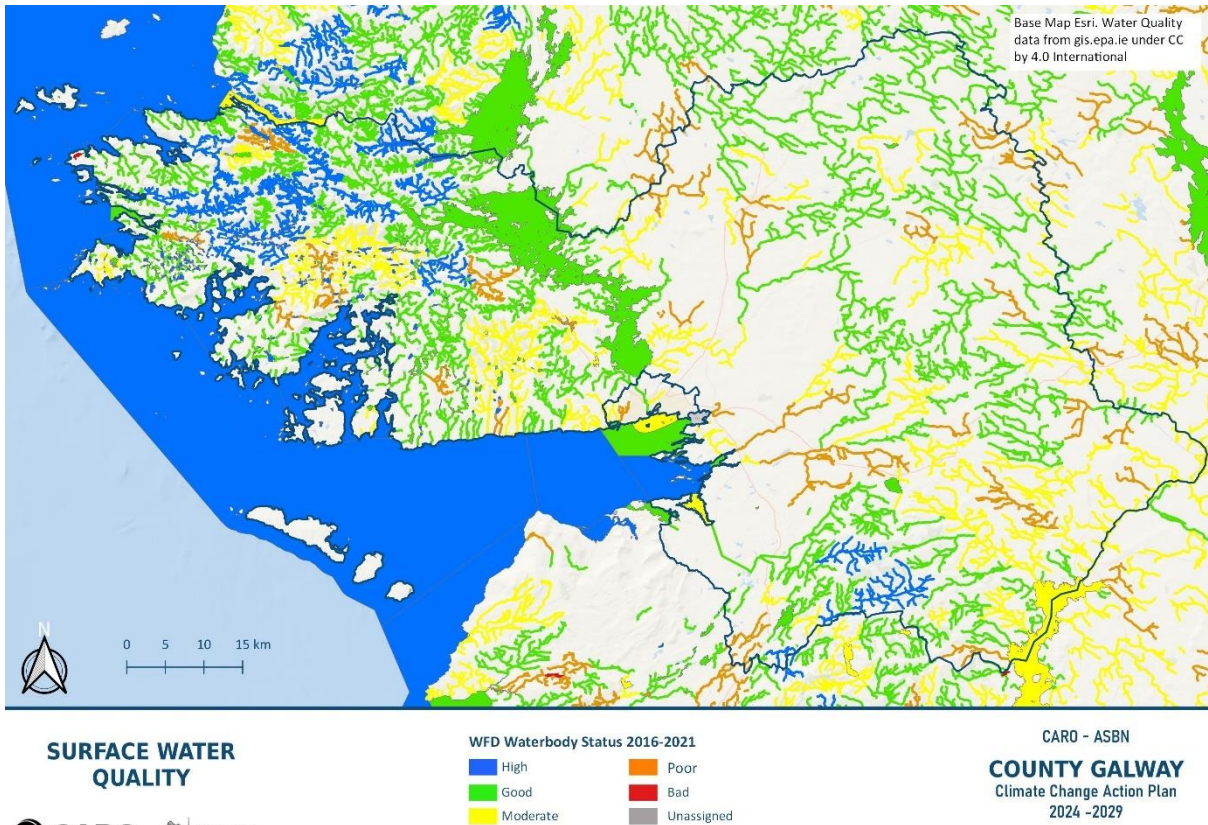
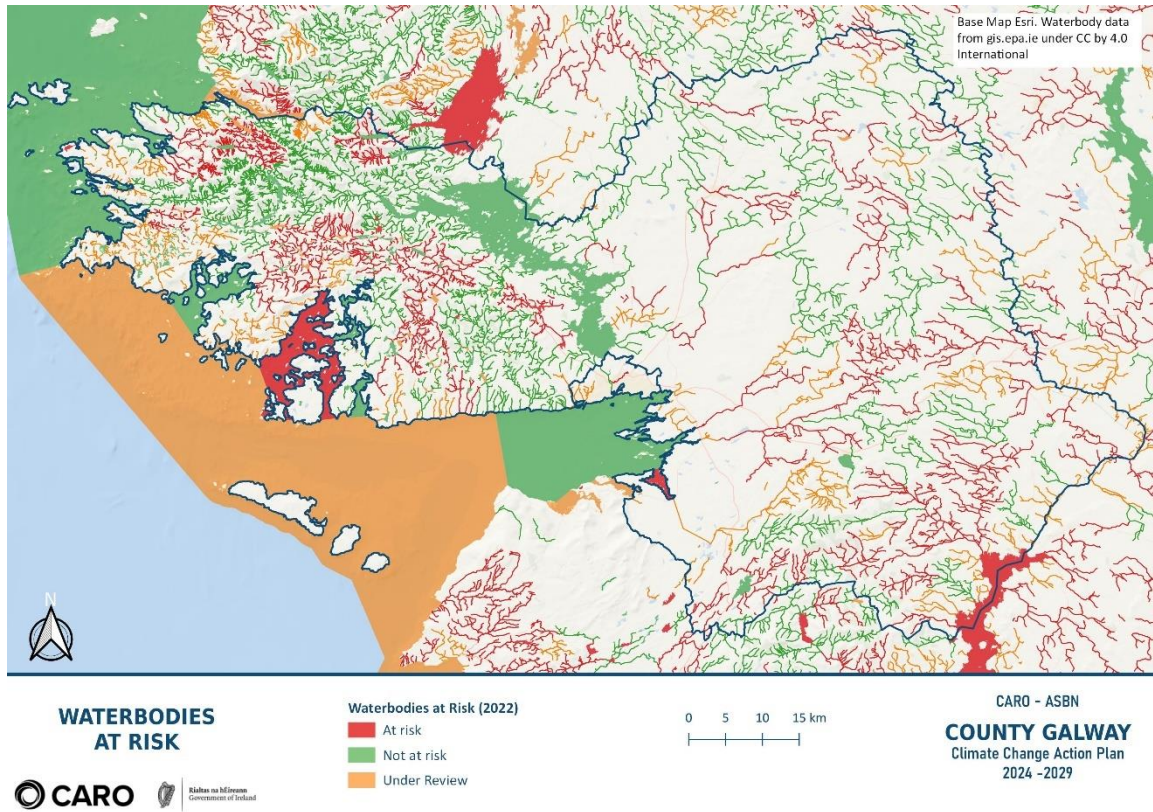


FIGURE 4-14 WATER BODIES AT RISK OF NOT MEETING WATER FRAMEWORK DIRECTIVE OBJECTIVES



4.6.1 Groundwater

Groundwater is a further significant resource and refers to water stored underground in saturated rock, sand, gravel, and soil. Surface and groundwater functions are closely related and form part of the hydrological cycle. The protection of groundwater from land uses is a critical consideration and groundwater vulnerability is becoming an important management tool. The entire island of Ireland has been designated as a Protected Area for Groundwater under the WFD. Groundwater is important as a drinking water supply as well as the supply to surface waters. In addition, groundwater supplies surface waters. Groundwater is exposed to higher concentrations of pollutants that are retained in the layers of rock and soil. The exposure to pollutants lasts much longer as groundwater moves at a slower pace through the aquifer. The quality of our drinking water supply, fisheries and terrestrial based habitats is intrinsically linked with groundwater quality. The Geological Survey of Ireland (GSI) aquifer categories are based on their vulnerability to pollution, i.e. the ease at which it can enter the subsurface layers. The classification of extreme or high vulnerability means that the groundwater in these areas is very vulnerable to contamination due to hydrogeological and soil factors.

Surface and groundwater are inextricably linked therefore making it difficult to protect from contamination. The protection of groundwater from human activity is crucial as the resource is highly susceptible to contamination with long-term consequences for humans and the environment. Overall, the groundwater status within the County is primarily of good status.

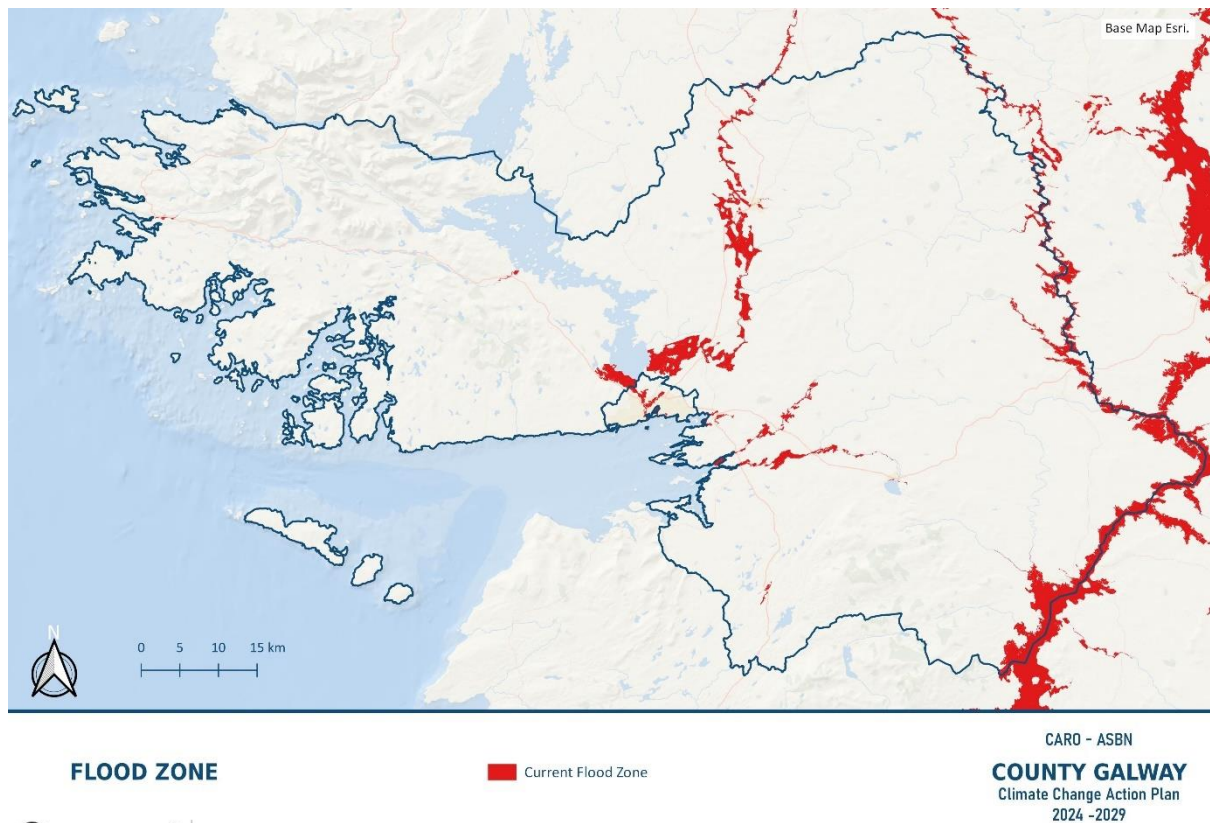
4.6.2 Coastal and marine planning

In 2019 the Department of Housing Planning and Local Government produced a Consultation Draft National Marine Planning Framework (NMPF). This is Ireland's first complete marine spatial plan document. It sets out a vision, objectives and policies to help direct decision-making in the maritime area using a plan-led approach. Following adoption of the NMPF in 2020, the Government will be exploring opportunities for the second cycle of MSP that includes the potential for different parts of the maritime area. This will include considering the potential for plans nested within the overall NMPF, providing a higher level of policy detail related to marine management tailored to the needs of a particular area or activity.

4.6.3 Flooding

With climate change there are increased extreme weather events that contribute to flooding across a range of sources. Certain areas across the County are at risk from flooding from sources including groundwater, pluvial, fluvial and coastal. There is historic evidence of flooding in various locations across the County, including coastal areas and along the County's various rivers and streams. See **Figure 4.15**.

FIGURE 4-15 FLOOD ZONES



4.6.4 Key Water Issues related to the Climate Action Plan

The main pressures on water quality arise from a number of sources including climate change and landuse activities and these can interact to exacerbate existing pressures on water quality. An example of such impacts are shown below:

- High precipitation - Increased surface and sewer flooding (leading to mobilisation)
- Low precipitation - Low flows and water levels causing reduced dilution of pollutants
- High temperatures - Spread of / increased viability of pathogens
- High temperatures - Changes in species distribution and phenology, including native, non-native and invasive species
- High temperatures - Drying of peatland can result in a reduction of natural pollution attenuation and flood prevention, the leaching of ammonia, and peat slides (when followed by heavy precipitation)¹

Climate change poses risks to the delivery of water management objectives, but these risks depend on local catchment and water body conditions. Climate change affects the status of water bodies, and it affects the effectiveness of measures to manage the water environment and meet policy objectives. The future impact of climate change on the water environment and its management is uncertain. Impacts are dependent on changes in the duration of dry spells and frequency of ‘flushing’ events. The following risks are identified for water resources:

- Lower water levels and higher water temperature will reduce dissolved oxygen and lead to algal blooms and increased concentration of bacteria and other pollutants in the water.
- Increased precipitation increases the risk to groundwater quality from septic tank systems, agricultural, forestry and urban centre runoff.
- Saltwater intrusion on freshwater systems.

¹

- River Basin Management plans will provide for more integrated management requirements for our water resources.
- Climate change threatens coastal areas, which are already stressed by human activity, pollution, invasive species and storms.
- Sea level rise threatens to erode and inundate coastal ecosystems and communities including unique ecosystems such as wetlands and machair (sand dunes).
- Warmer and more acidic oceans are likely to disrupt coastal and marine ecosystems on native species, algal blooms.
- Increase in fluvial, pluvial (urban storm water) and groundwater flood risk.
- Increasing risk to our coastal communities and assets.
- Threat of coastal squeeze of inter-tidal habitats where hard defenses exist.
- The development of flood forecasting systems in conjunction with community.

4.6.5 SEA Recommendations

- Landscape consideration of water through LAWPRO and catchment management
- Support for peatland restoration and nature based solutions through the catchment management to 'slow the flow' and increase overall resilience of the ecosystems.
- Research and assessment of risks and then supporting actions to achieving Water Framework Directive Objectives from climate change impacts.

4.7 Air Quality:

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.

The Air Quality Index of health¹ is based on hourly monitoring data from sites around Ireland and is based on measurements of five air pollutants all of which can harm health. The five pollutants are:

- Ozone gas
- Nitrogen dioxide gas
- Sulphur dioxide gas
- PM2.5 particles and PM 10 particles.

Air quality and health is discussed under Section 4.4 Population and Human Health.

4.7.1 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 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)

¹ <http://www.epa.ie/air/quality/>

- Industry & Other
- Agriculture
- Land Use, Land Use Change and Forestry (LULUCF)

Figure 4.16 provides a summary of Co. Galway emissions in comparison to National emissions. GHG emissions for County Galway in 2019 totalled 3,009 ktCO₂e of the national total. As Galway is a predominately rural county emissions from agriculture and land use, land use change and forestry (LULUCF) form a higher % of county emissions than the national average while industrial, commercial are lower than the national average. Galway County Council’s own emissions account for 7 ktCO₂e, less than 1% of the county’s emissions.

FIGURE 4-16 COUNTY GALWAY EMISSIONS, NATIONAL EMISSIONS AND AS % OF NATIONAL EMISSIONS

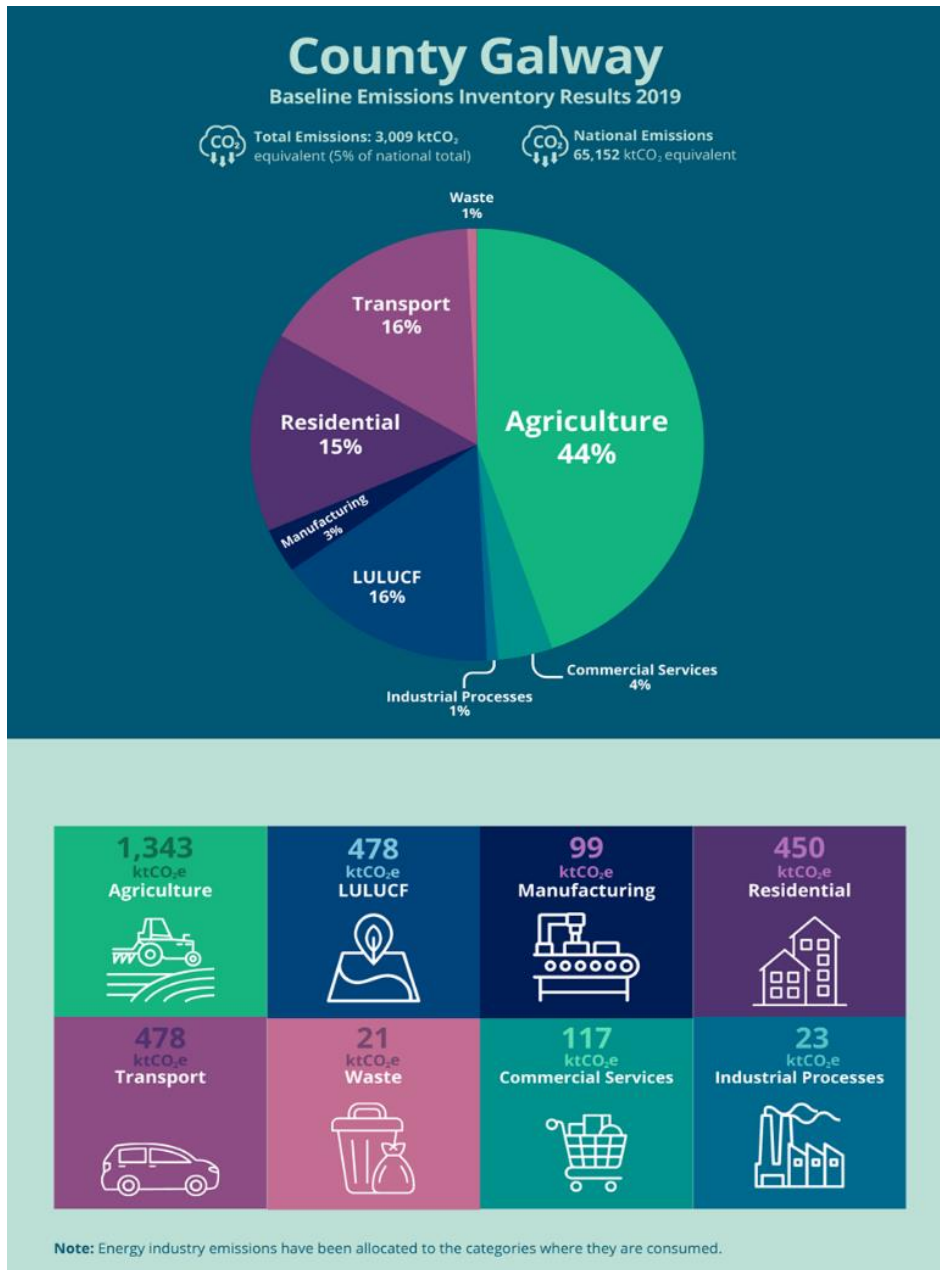


Figure 4.17 presents the extreme climate events in County Galway, from the CAP 2024.

FIGURE 4-17 EXTREME CLIMATE EVENTS IN CO GALWAY

Highlights of Observed Climate Change for Ireland and County Galway

Droughts



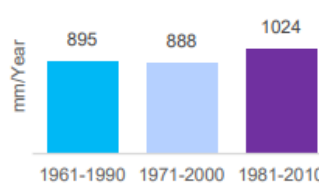
During the 2018 Drought, summer precipitation levels were 43% below average across all weather stations when compared to the 1961-1990 baseline**



Highest temperature on record recorded on July 18th 2022 at Athenry

Rainfall

Average annual rainfall increased by 14% for the most recent period (1981-2010) compared to their 1961-1990 baseline.**



0.52°C

Average temperature increase for the period 1981-2010 when compared to the 1961-1990 baseline.***

2020 was the wettest year on record across the county with average precipitation levels 105% above the 1961-1990 baseline



Groundwater flooding during Dec 2015/Jan 2016 in Gort inundated 24 km² of land, with agricultural land submerged for 6 months

4.7.2 Key Air Quality and Climate Issues related to the Climate Action Plan

These have been identified as cross cutting impacts across all the SEA topics scoped into the SEA ER and are presented throughout the document.

Climate change is impacting ecosystems through changes in mean conditions and in climate variability, coupled with other associated changes such as increased ocean acidification and atmospheric carbon dioxide concentrations. It also interacts with other pressures on ecosystems, including degradation, defaunation and fragmentation. At the same time, ecosystems can also assist in the mitigation of, and adaptation to, climate change.

4.7.3 SEA recommendations

Actions in the CAP should be cross cutting and encompass all the sectors for emission reductions:

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

A focus on nature based solutions, the opportunity to provide co benefits for other environmental topics and strong evidence based approach to solutions is recommended.

EPA data is clear that reaching the 2030 target requires implementation of policies that deliver emission reductions across all sectors in the short term. Current decarbonisation actions are being outpaced by increased energy demand across the economy and dependence on fossil fuels for energy generation. A continued lack of delivery of large-scale practical actions to decarbonise activities in all sectors will see an exceedance of the first two carbon budgets.

4.8 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.

4.8.1 Transport

As one of the key sectors for emission reduction, actions are urgently needed to promote other forms of transport modes. In terms of transport infrastructure, the N/M6 and N17/18 are the county's main access routes and there are approximately 771 kms of regional roads and 5,331kms of local roads in the county. The Western Rail Corridor serves stations from Limerick to Athenry while the county is accessible to neighboring international airports in counties Mayo and Clare. Ros a' Mhíl is the main ferry port for the Aran Islands.

4.8.2 Water services

The EPA's 2022 report 'Urban Wastewater Treatment in 2021' identified that:

- Raw sewage is released into the environment from urban areas including: Ahascragh, Carraroe, Roundstone and Spiddal;
- Wastewater from the following towns needs improvement as it is the main significant pressure on waters at risk of pollution: Athenry, Ballymoe, Loughrea, Mountbellew and Woodford ;

The County is served by various Wastewater Treatment Plants (WWTPs). In unserved areas and outside the main settlements, the main method of sewage disposal is by individual septic tanks (64%) and other types of wastewater treatment (7%). .

Public drinking water in County Galway is supplied through 38 public water supply schemes and approximately 80% of the treated water supplied through this infrastructure network is abstracted from surface water sources.⁶⁷ The remaining households are served by either Group Water Schemes or private wells, which do not fall within the remit of Irish Water. There is surplus supply available in all zones except Rosmuc Public Supply. The highest amount of surplus is available in Lough Corrib (Galway City, Tuam, Loughrea) WRZ.

4.8.3 Energy

In County Galway, the principal renewable energy sources are wind and micro- renewables (such as small scale hydro plants and domestic solar panels). There are opportunities for other sources, such as green hydrogen and biomethane. In addition to energy relating to transport and agriculture, the energy in residential and other buildings is a key consideration and now supported through a national scheme. Improving existing energy efficiency in housing stock will contribute to lower GHG emissions from carbon sources, as well as reduce fuel poverty and improve air quality.

4.8.4 Waste

The waste sector was responsible for 1.5% of Ireland's Greenhouse Gas emissions in 2018. The waste sector includes emission estimates from solid waste disposal, composting, waste incineration, open burning of waste and wastewater treatment and discharge. The largest of these sources is solid waste disposal on land (landfills) where CH₄ is the gas concerned. The Climate Action Plan includes specific targets combatting waste including reductions in household waste, landfill reliance, plastics and food waste. It also sets out ambitious recycling targets for municipal, plastic and packaging waste.

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.

A recent OECD study found that Ireland has a circular material use rate of 1.8 per cent, relative to an EU average of 12.8%. Systemic change is needed across all economic sectors to shift the focus to designing out and reducing waste and promoting reuse and recycling.

Food waste is a serious issue and in Ireland, approximately 800,000 tonnes of food waste is generated a year and the government has made a commitment under UN SDG 12.3 to reduce food waste by half by 2030. Food waste is also a source of Greenhouse Gas Emissions. The only way to reduce food waste is through its prevention, so the focus in the food use hierarchy must be on food waste prevention. The national food waste prevention programme sits within the EPA's Circular Economy Programme. Stop Food Waste is the consumer-facing national food waste prevention campaign. In relation to food waste prevention in the food supply chain, a revised Food Waste Charter launched in June 2023, with a call to action to businesses across the food supply chain to sign up to this voluntary agreement and pledge to measure, take target-based actions and report on food waste¹.

4.8.5 Key Material Asset issues relating to the Climate Action Plan

Flood events and possible consequent risk of subsidence may have a significant impact on critical infrastructure such as roads, rail, electricity, water and communications. This in turn would have a potential impact on productivity, economic confidence and general social wellbeing. Hotter summers could also place an additional stress on key infrastructure.

- High temperatures can result in Hot-weather-related changes in demand (e.g. higher daily and peak demand). Higher precipitation levels can result in more frequent water/wastewater asset flooding, asset loss and potential for environmental pollution as well as increased drawdown in the autumn/winter for flood capacity, leading to resource issues in the following spring/summer.
- Low precipitation - Reduced availability of water resources (surface water and groundwater sources)
- Increased storminess Business continuity impacts/ interruptions
- More frequent water/wastewater asset flooding, asset loss and potential for environmental pollution. Interruption to business continuity².
- Actions relating to circular economy, food waste and local food production.

4.8.6 SEA Recommendations

- Identify material assets most at risk from impacts of climate change.
- Increase resilience to effects of climate change on critical infrastructure.
- Energy transition and decarbonise the plan area to help meet targets.
- Energy efficiency measures and the decarbonising zone.
- Support for nature based solutions to avoid over engineering responses to impacts on material assets.

4.9 Cultural Heritage:

County Galway has a rich archaeological heritage. There are many sites of significant archaeological interest in County Galway, including two sites within or partially within the County included on the Tentative UNESCO World Heritage Sites List the Burren; and the Western Stone Forts. A Tentative List is an inventory of properties which a country intends to consider for nomination to the World Heritage List. Clusters of archaeological heritage are identified: along the coastline; along river and lake banks; surrounding settlements (such as Galway City, Headford, Tuam, Oranmore, Athenry, Loughrea and Gort); in lowland rural areas; and on the County's Islands, including Oileán Árann and Inishbofin. There are lower concentrations in the central upland areas. There are 88 Monuments in State Care (81 in State Ownership and seven in State Guardianship)⁷⁶ within the County, including Dunmore Abbey, Athenry Castle, Dun Aengus, St. MacDara's Island and Pearse's Cottage.

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

¹ EPA submission Re: Call for Expert Evidence - Climate Action Plan 2024 (EPAC-1023)

² Water Quality and Water Services Infrastructure Climate Change Sectoral Adaptation Plan

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

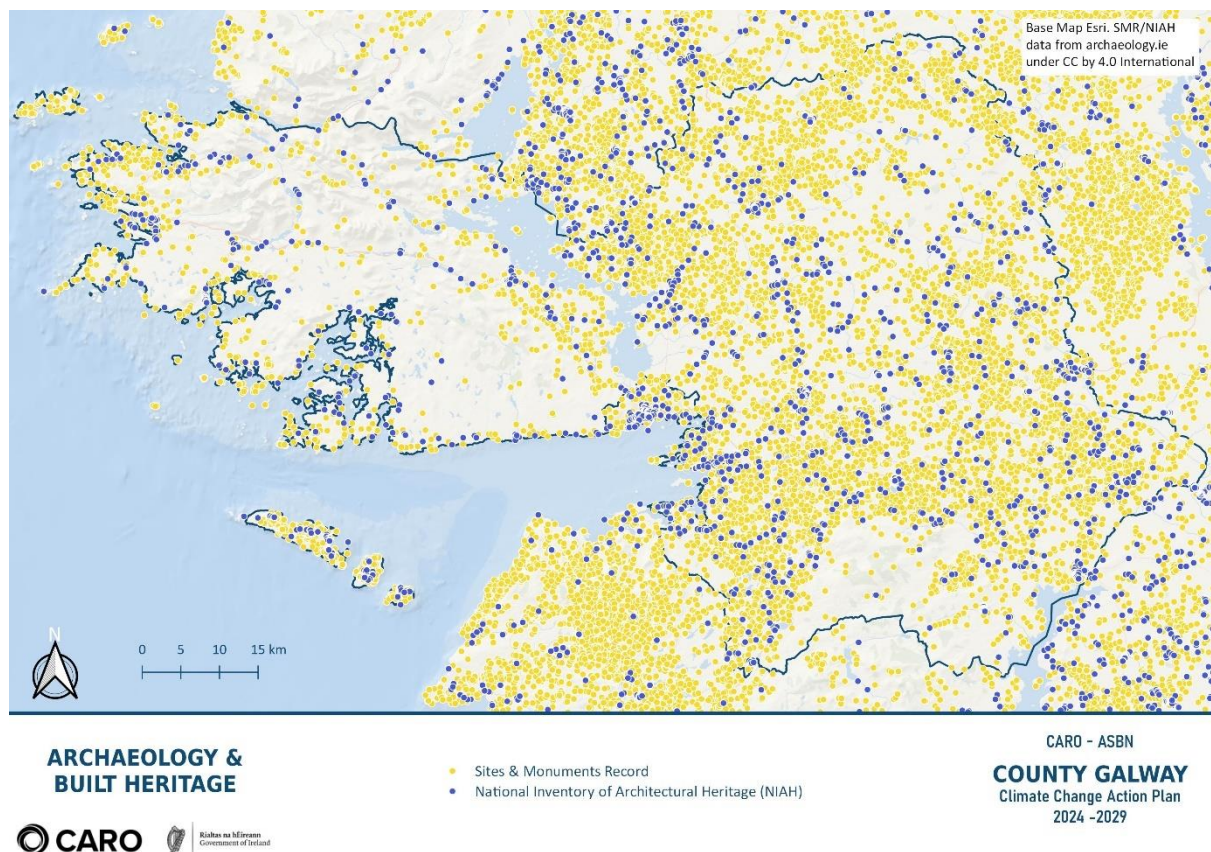
There are over 1,500 of entries to the Record of Protected Structures within the County. The purpose of the National Inventory of Architectural Heritage (NIAH) is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister of Culture, Heritage and the Gaeltacht to the local authorities for the inclusion of particular structures in their Record of Protected Structures. The NIAH includes historic gardens and designed landscapes.

There is also, in the plan area, a rich heritage of stone buildings and examples of a rich vernacular building tradition which evolved, over many millennia, to suit life in County Galway. While many of these are not included in the Recorded of Protected Structures, they nevertheless contribute to the character of an area by their history, use of local, sustainable materials, classical proportions and inoffensive scale.

Figure 4.18 presents the sites and monuments record and the national inventory of architectural heritage data.

Finally local cultural features, both tangible and intangible are cumulatively very significant and contribute to sense of place. The Irish language and linguistic heritage is an intrinsic part of the cultural experience and life in the county.

FIGURE 4-18 ARCHAEOLOGICAL AND BUILT HERITAGE



4.9.1 Key Cultural Heritage issues relating to the Climate Action Plan

- The direct effects of climate change on heritage may be immediate or cumulative. Thus, damage from catastrophic events such as floods and storms are likely to increase at the

same time as slow-onset environmental deterioration mechanisms. The way these impacts manifest will vary according to the sensitivity of the heritage and its exposure (Murphy and Ings, 2013). Exposure will alter with location and aspect, while sensitivity will be determined by the nature of the heritage resource (type, material) and its current condition.

- In addition, there will be indirect impacts related to societal responses to climate change in terms of both adaptation (e.g. changes in land use) and mitigation (e.g. the renovation or upgrading of historic buildings to reduce energy consumption).
- The Urban heat island effect is likely to act as a risk multiplier, meaning that buildings in urban centres will be propelled more rapidly towards damaging temperature thresholds for microbiological and/or chemical decay mechanisms. Higher temperatures can provide conditions for established pest species to spread and increase in number.
- The EU-funded Climate for Culture research project used climate modelling and whole-building simulation tools to predict how climate change will affect historic interiors in Europe. Western Atlantic Europe is likely to see an increase in biodeterioration due to mould and pests as higher temperatures provide more hospitable environments for both.
- Cultural landscapes such as parks and gardens and archaeological clusters are at risk from increasing pests and diseases as well as droughts, wildfires and windthrow. Alterations in natural landscape characteristics will also impact indirectly on material cultural heritage by disturbing the 'sense of place' and on intangible culture, which expresses landscape through art, poetry and music.

4.9.2 SEA Recommendations

- Creative responses to engage on climate change through Creative Ireland support.
- Support for energy efficiency and adaptive reuse of existing buildings

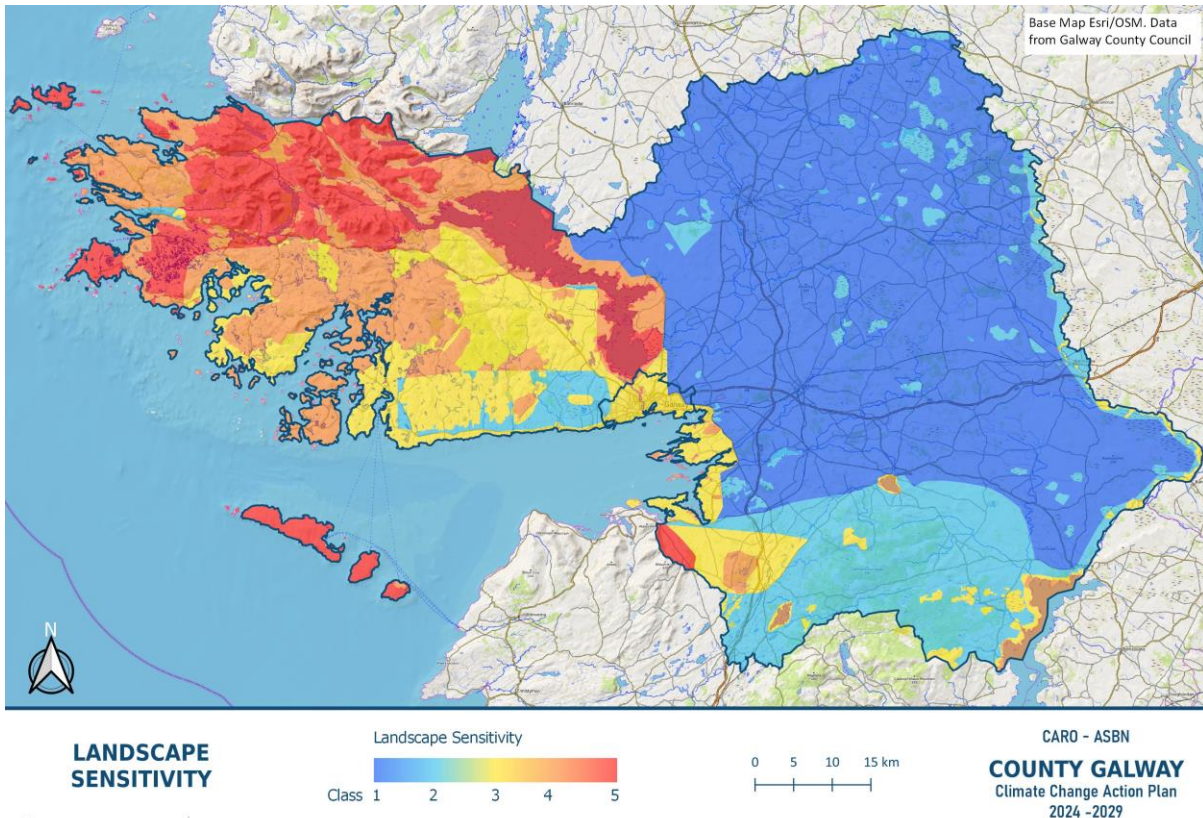
4.10 Landscape and Visual:

Landscape consists of a series of layers including landform (geology and geomorphology), land cover (vegetation, water, human settlements) and human values (historical, cultural, religious) and other understandings and interactions with landform and land cover. The landscape plays an important role in people's lives, providing individuals and communities with a sense of identity and belonging, as well as bestowing a sense of place. Landscape is the context within which change takes place.

The National Landscape Strategy (NLS) for Ireland 2015-2025 seeks to provide a framework for the protection of the many cultural, social, economic and environmental values embedded in the landscape. The objective of the NLS is to provide the data that will assist in the future decision-making process regarding our landscapes, and which will ensure that decisions are made on the basis of factual evidence collected. The NLS will assist in the achievement of greater consistency in decision making across the country when dealing with issues of landscape, in particular via landscape character assessment. It will be used to ensure compliance with the European Landscape Convention and to establish principles for protecting and enhancing the landscape while positively managing its change. It will provide a high-level policy framework to achieve balance between the protection, management and planning the landscape by way of supporting actions.

The components of Landscape Character Assessment are Landscape Character Types, Landscape Character Areas and Seascape Character Areas. Galway County Council Landscape Character Assessment have identified three Landscape Regions, which include ten distinctive Landscape Character Types. Figure 4.19 shows the landscape sensitivity map for the County.

FIGURE 4-19 COUNTY LANDSCAPE SENSITIVITY



The Regional Seascape Character Assessment identified two principle Regional SCAs for the County as follows:

Atlantic North Mayo and Galway	Atlantic Galway Bay and Islands
<p>This SCA includes some of the best known and iconic coasts and seascapes of Ireland. There is a broad consistency of coast and seascape character across this SCA. Seascapes are frequently framed by mountains that creates a highly scenic views, reflected this area’s popularity for recreation and tourism. Atlantic facing coasts comprising a mix of elevated land, with cliffs and occasional sea stacks visible. - The mountains that frame much of this SCA create a series of well-known and iconic seascape vistas. Numerous offshore and nearshore Atlantic islands, notably Clare, Achill, Inisturk and Inishbofin; many of the other islands within this SCA have become uninhabited within the past 80-90 years such as Iniskea islands</p> <ul style="list-style-type: none"> • Cultural and linguistic ties to the sea remain strong for example placenames at Achill, Belmullet. • Highly dramatic coastal landscape interacting with the weather systems and force of Atlantic waves. This is particularly pronounced at the northern and western parts of this SCA • The eastern and south-eastern inlets, bays and sandy beaches are indented and complex. • Sea is consistently present; even when not visible, the sound of the Atlantic is constant through waves or wind. Salt laden winds and rain can result in salt being deposited on windows and “burned” foliage at inland locations. 	<p>A large limestone bay (Galway Bay) is framed by two distinctive and very different coastlines, north (Connemara) and South (Burren); this SCA extends to encompass the Aran Islands. A coherent SCA, there is considerable diversity associated with it, due to the changing geology, influence of the ocean and the presence of Galway city at the mouth of the River Corrib.</p> <ul style="list-style-type: none"> • Aran Islands are the most westerly islands associated with this SCA, with a number of inshore islands particularly associated with Connemara coastline, connected with many of the causeways and bridges joining the islands of Lettermullan built between 1886 -1891. • Aughinish Island, uniquely for Ireland, is joined by road to Co. Galway but is part of Co. Clare; this island was temporarily isolated for five decades following tidal waves originated in the earthquake of Lisbon in 1751 . • Tourism and particularly strong associations with art and folk music and seafood are identified for this SCA. • Distinctive boating tradition of the Galway hookers as well as particular fishing communities associated with this area, notably at Claddagh. • The density of islands, islets and skerries/carraigs provides a particular character concentrated on the northern part of this SCA but also present around Blackhead Bay. The naming and descriptors given to all

<ul style="list-style-type: none"> • a varied seascape, frequently quite close to sea level and comprising a distinctive rocky shoreline and inter tidal zone, interspersed with generally small sandy beaches. Islands contribute to seascape character; many small islands are present close to shore, as well as more substantial islands such as Achill and Clare Islands. 	<p>these features, from large to small, demonstrate the importance of navigating in and around this SCA.</p> <ul style="list-style-type: none"> • Influence of the sea on land is generally consistent due to low-lying topography, indented coast and more exposed elevated areas. • The coastal hinterland varies from the exposed peninsula around Slyne Head, to rocky indented shorelines with small harbours, urban and industrial landuse around Galway City and Docks and the limestone coastal shelf and pavement of the Burren
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4.10.1 Key Landscape and Seascape issues relating to the Climate Action Plan

Landscape changes will result from climate change impacts on:

- soils and vegetation
- farming and forestry
- rivers and coasts
- hills and lowlands
- buildings

Landscapes will also be affected by adaptation and mitigation measures in response to climate change, for example renewable energy infrastructure, or interventions to address surface water management, modal shifts and flooding. There is also likely to be an increase in river flooding, erosion and slope instability. Semi-natural habitats are likely to change as species' favoured conditions move north. This could affect peat bogs, native woodlands and upland plant communities. There are likely to be direct effects on trees and forests reflecting changing patterns of rainfall, increases in storm damage and a potential increase in pests and disease. This could be most evident in agricultural areas, woodlands, designed landscapes and settlements. The pattern of snowfall and snow lie is likely to change.

Along low lying sections of coast, or in areas where flooding or land stability are already issues, changes in landscape character could be quite dramatic. However, for the most part these changes will be more gradual and subtle - modifying rather than transforming the landscape.

4.10.2 SEA recommendations

- Landscape response to climate adaptation where possible
- Integration of blue and green infrastructure
- Engagement and awareness raising around landscape scale effects and response to climate change.

4.11 Decarbonising Zone.

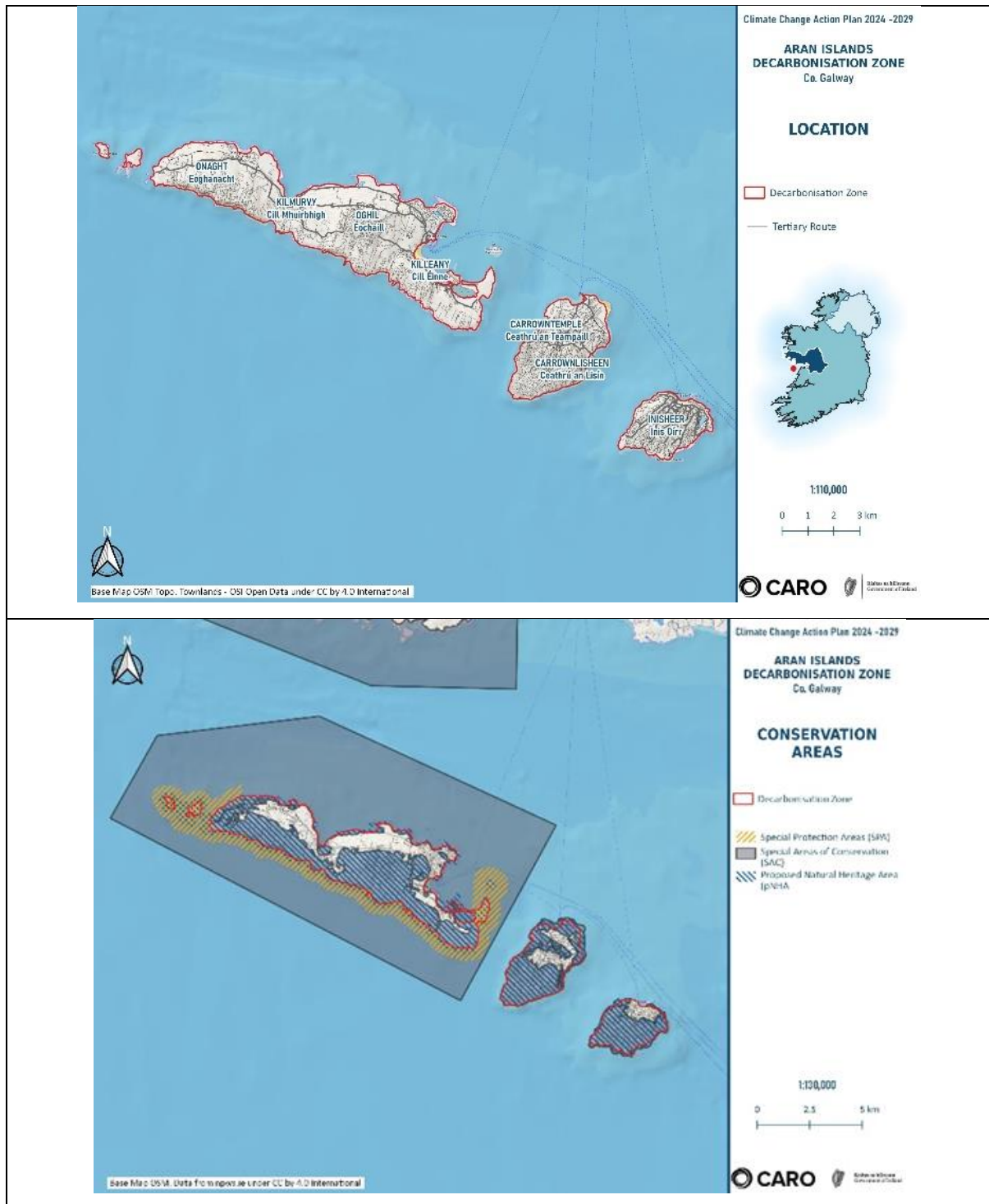
*'A Decarbonisation Zone (DZ) is a spatial area identified by the local authority in which a range of climate mitigation, adaptation and biodiversity measures and action owners are identified to address local low carbon energy, greenhouse gas emissions, and climate needs to contribute to national climate action targets.'*¹

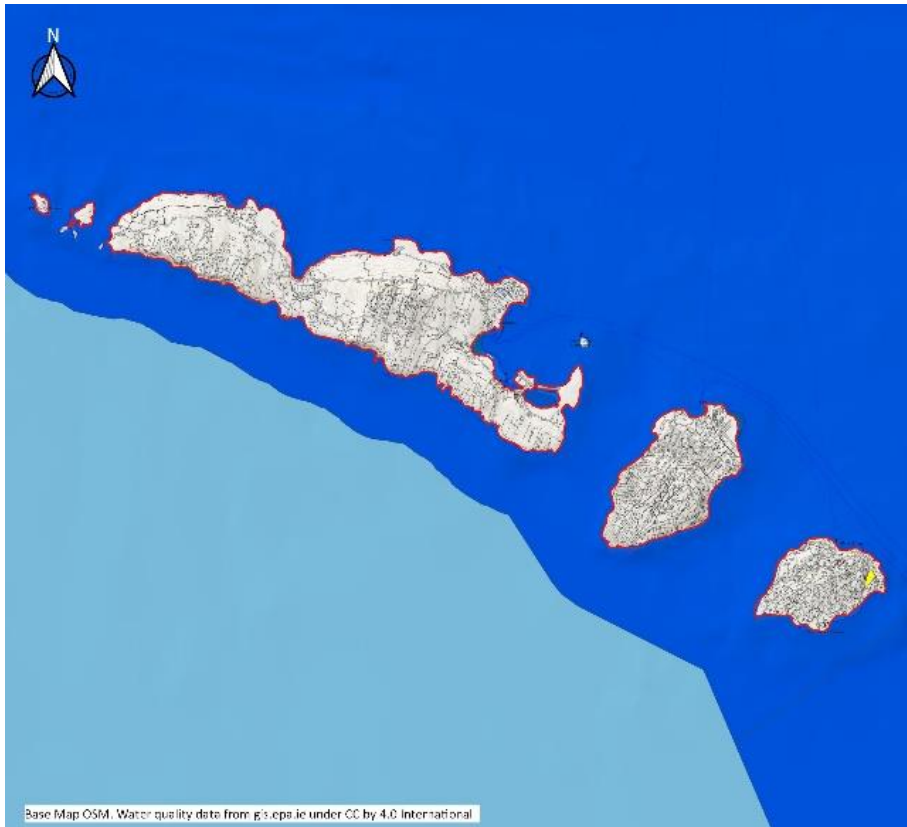
In accordance with Action 165 of the National Climate Action Plan 2019, each local authority was required to 'identify and develop plans for one Decarbonising Zone' within their respective administrative area. An Action Plan for the DZs must be included in the Local Authority Climate Action Plans (LA 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.

¹ DHLGH, Circular Letter LGSM01-2021, 10/02/21

The three Aran Islands – Inis Mór, Inis Meáin, and Inis Óirr have been selected for the County Galway Decarbonising Zone. See **Figure 4.20** for the boundary of the DZ and environmental maps and **Figure 4.21** for environmental sensitivity map, this map shows the ranking and data used to generate the overall environmental sensitivity map.

FIGURE 4-20 INIS MÓR, INIS MEÁIN, AND INIS ÓIRR DECARBONISING ZONE ENVIRONMENTAL PROFILE





Climate Change Action Plan 2024 -2029

**ARAN ISLANDS
DECARBONISATION ZONE**
Co. Galway

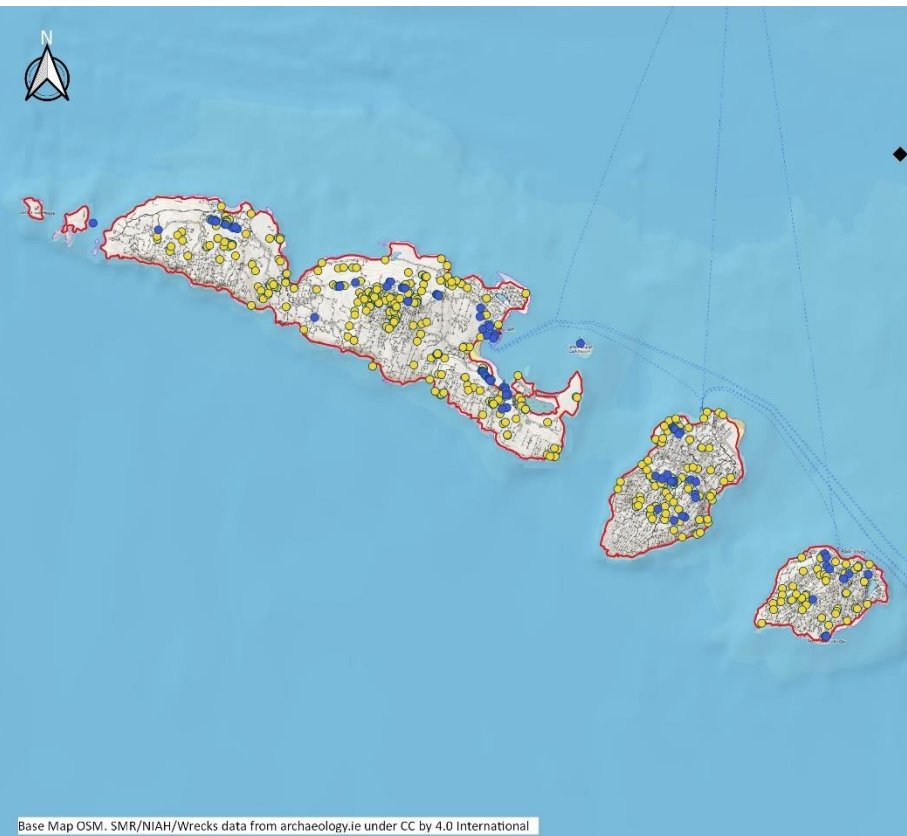
**SURFACE WATER
QUALITY**

Decarbonisation Zone

WFD Waterbody Status 2016-2021

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

1:110,000



Climate Change Action Plan 2024 -2029

**ARAN ISLANDS
DECARBONISATION ZONE**
Co. Galway

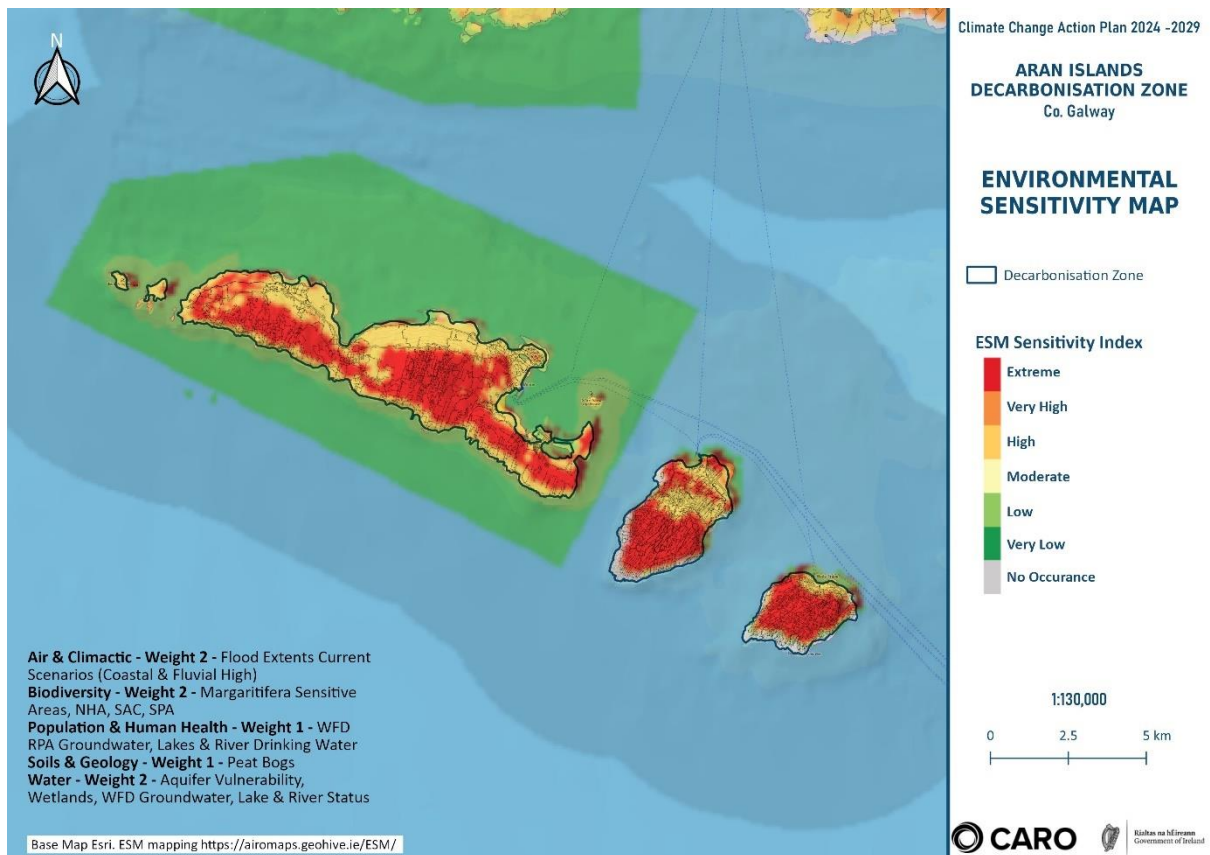
**ARCHAEOLOGY &
BUILT HERITAGE**

- Sites & Monuments Record
- National Inventory of Architectural Heritage (NIAH)
- Wrecks

1:110,000



FIGURE 4-21 ENVIRONMENTAL SENSITIVITY MAP FOR DECARBONISING ZONE



4.12 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 Galway County Development Plan 2022-2028.

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-2022 -2028 will remain the primary landuse framework for the county, 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 the county.

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 as peatland projects would be omitted. At county 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 county actions relating to public transport, walking and cycling may be less effective in the absence of this action plan.

4.13 Environmental Sensitivity Mapping and inter-relationships

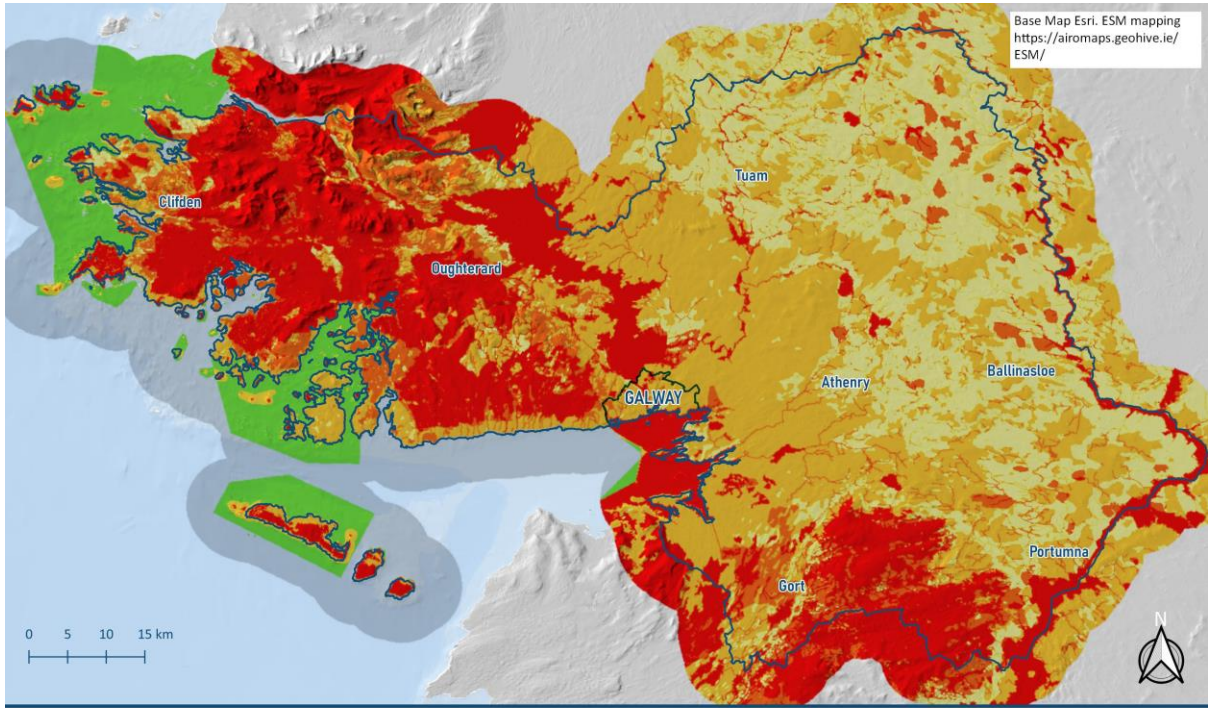
Environmental sensitivity mapping was prepared to inform the overall assessment of the CAP and to aggregate different environmental themes to help identify areas of greater and lesser environmental sensitivity. The key datasets used to inform this sensitivity mapping are shown in the ESM map in **Figure 4.22**. The environmental sensitivities map shows the level of overlap of environmental sensitivities and the range of physical environmental factors. It is important to note that the environmental factors not reflected on this map, e.g. those that are point specific, like protected

structures, were not included as it was considered by their inclusion; it would potentially give a visual mis-representation of sensitivity when considering potential areas for future growth. Also, important to note is that the physical extent of the environmental sensitivity can extend beyond the defined area on the map, as the potential impact can be generated at a location remote from the mapped area. For example, a development outside of a designated site boundary does not mean that it cannot impact on it.

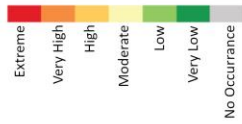
The areas of greatest overall environmental sensitivity are associated with the western and southern parts of the plan area with numerous international designations for natural heritage, significant cultural heritage resources, landscape sensitivity and aquifer vulnerability; this includes the three islands of Inis Mór, Inis Meáin, and Inis Oírr.

The mapping also highlights the interaction of key environmental parameters, whilst all environmental parameters interact with each other to an extent, key interactions as shown below relate to water, biodiversity and with climate change in particular. All the parameters interact with Population and Human Health.

FIGURE 4-22 ENVIRONMENTAL SENSITIVITY MAPPING



ENVIRONMENTAL SENSITIVITY MAP



Air & Climactic - Weight 2 - Flood Extents Current Scenarios (Coastal & Fluvial High)
 Biodiversity - Weight 2 - Margaritifera Sensitive Areas, NHA, SAC, SPA
 Population & Human Health - Weight 1 - WFD RPA
 Groundwater, Lakes & River Drinking Water
 Soils & Geology - Weight 1 - Peat Bogs

CARO - ASBN
COUNTY GALWAY
 Climate Change Action Plan
 2024 -2029

5 Strategic Environmental Objectives

5.1 Introduction

The purpose of the Strategic Environmental Objectives (SEO) is to ensure that the assessment process is transparent and robust, and that the CAP and SEA considers and addresses potential environmental effects. Draft SEOs have been set for each of the environmental topics outlined in **Table 5.1** and are from the SEA of the Galway County Development Plan 2022 -2028, with some new/amended SEOs proposed to reflect the CAP. The results of this will be summarized in a table, called an evaluation matrix.

TABLE 5-1 STRATEGIC ENVIRONMENTAL OBJECTIVES

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028	
Climate Change	<ul style="list-style-type: none"> • Support the delivery of all national climate policy as appropriate to the county with the prioritisation and acceleration of evidence-based measures. • To minimise emissions of greenhouse gasses • Integrate sustainable design solutions into the County’s infrastructure (e.g. energy efficient buildings: green infrastructure) Contribute towards the reduction of greenhouse gas emissions in line with national targets • Promote development resilient to the effects of climate change • Promote the use of renewable energy, energy efficient development and increased use of public transport
Population and Human Health (PHH)	<ul style="list-style-type: none"> • 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. • Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management • Ensure that existing population and planned growth is matched with the required public infrastructure and the required services
Biodiversity, Flora and Fauna (BFF)	<ul style="list-style-type: none"> • To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species • Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function • Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species • Enhance biodiversity in line with the National Biodiversity Strategy and its targets including no net contribution to biodiversity losses or deterioration.¹ • To protect, maintain and conserve the County’s natural capita
Soil and Geology (SG)	<ul style="list-style-type: none"> • Protect soils against pollution, and prevent degradation of the soil resource • Promote the sustainable use of infill and brownfield sites over the use of greenfield within the County • Safeguard areas of prime agricultural land and designated geological sites

¹ Inserted following submission at Scoping Stage by Department of Housing, Heritage and Local Government

Strategic Environmental Objectives in the Galway County Development Plan 2022-2028	
Water (W)	<ul style="list-style-type: none"> • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and County growth targets in the context of existing and projected water supply and wastewater capacity constraints ensuring the protection of receiving environments • Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposal
Air and Noise (AN)	<ul style="list-style-type: none"> • To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture • Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency • Promote continuing improvement in air quality • Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution • Meet Air Quality Directive standards for the protection of human health • Significantly decrease noise pollution by 2020 and move closer to WHO recommended level
Material Assets	<ul style="list-style-type: none"> • Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County • Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, solar, hydro, biomass, energy from waste and traditional fossil fuels • Promote the circular economy, reduce waste, and increase energy efficiencies • Ensure there is adequate sewerage and drainage infrastructure in place to support new development • Facilitate, as appropriate, Irish Water in developing water and wastewater infrastructure
Cultural Heritage (CH)	<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> <ul style="list-style-type: none"> • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage
Landscape	<ul style="list-style-type: none"> • To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention

6 Consideration of Alternatives

6.1 Introduction

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 County 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

6.2 Key environmental challenges at county scale

In addition to the environmental sensitivity map presented in Chapter 5, the following key environmental issues are relevant to the CAP and alternatives under consideration:

- Water Framework Directive and achievement of 'good' status
- Environment section identifying areas under pressure.
- European Sites, species and habitats under Wildlife Act and NHAs, pNHAs
- Monitoring of WFD.
- Climate Change – effects, mitigation, adaption and actions in the Climate Action Plan.
- Non designated hedgerows and treelines and their roles and significance for foraging and commuting for wildlife.
- Need to protect the remaining High Status waterbodies in the County. The decline in status connected to drainage and hydro morphological change.
- Local Authority Water Project Officer (LAWPRO) setting up work programme.
- Bathing Water Quality – longest coastline and higher number of designated bathing waters

6.2.1 Climate Hazard Impacts

The key results from the Climate Change Risk Assessment including impacts experienced to date in Galway and future risks are summarised below:

Key Results:

- ▲ Recent experiences of **river and pluvial flooding** events in 2015/16, 2017 and 2020, resulted in damages to buildings, disruption of transport networks (e.g. L4519 and L4506), and impacts on business and local economy. Projected increases in the frequency of extreme precipitation events will result in increased surface water and riverine flood risk for Galway County.
- ▲ **Coastal erosion and flooding pose a significant** risk for County Galway and have resulted in temporary inundation of buildings (e.g. homes in Cave), damages to coastal habitats and heritage sites (e.g. 17th century church in Aughinish), and disruption of transport networks (e.g. N59). Rising sea levels will increase the frequency of coastal inundation and rate of coastal erosion, resulting in an increased coastal flood and erosion risk for County Galway.
- ▲ County Galway experienced both a **heatwave and drought** in 2018 and 2022, with heatwaves also recorded in 2021. These events resulted in damage to road surfaces (e.g. Connemara), increased demand placed on water resources, and increased frequency of uncontrolled fire (e.g. Curraghline). Projected increases in the frequency of heatwaves and drought conditions will mean that events currently experienced on an infrequent basis will become more frequent.
- **Severe windstorms** are currently experienced on a frequent basis in County Galway and result in wide-ranging impacts, including disruption to energy supply and transport networks (e.g. N59). Projections indicate no significant change to this frequency.
- **Groundwater flooding** is currently experienced on an occasional basis in County Galway and result in significant impacts including disruption of transport, submergence of agricultural lands for extended periods and detrimental impacts on water quality. Projections indicate no change to this frequency.
- ▼ Recent experiences of **cold spells and heavy snowfall** events in 2018 (e.g. Storm Emma) demonstrated the wide range of impacts of these events for County Galway. These included, amongst others, road closures (e.g. N17 and R332), an increase in the frequency of trips and falls, disruption to public transport, power outages, impacts on water resources, and closure of business with impacts on the local economy. Projected increases in average temperature and decreases in the frequency of snowfall indicate a decrease in the frequency of cold spells, heavy snowfall, and their associated impacts.

6.2.2 Assessment of Consideration of Alternatives

Table 6.1 presents the criteria used in the assessment matrix and the SEOs that the alternatives are assessed against are those presented in the previous Chapter Five SEOs. **Table 6.2** presents the evaluation of the alternatives.

TABLE 6-1 ASSESSMENT CRITERIA

(+)	reflects a potential positive effect
(-)	reflects a potential negative effect
(+/-)	reflects that positive and negative effects are likely or that in the absence of further detail the effect is unclear
(0)	reflects a neutral or uncertain effect

TABLE 6-2 EVALUATION OF ALTERNATIVES

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<p>Climate Change</p> <ul style="list-style-type: none"> Support the delivery of all national climate policy as appropriate to the county with the prioritisation and acceleration of evidence-based measures. To minimise emissions of greenhouse gasses Integrate sustainable design solutions into the County's infrastructure (e.g. energy efficient buildings: green infrastructure) <p>Contribute towards the reduction of greenhouse gas emissions in line with national targets</p> <ul style="list-style-type: none"> Promote development resilient to the effects of climate change Promote the use of renewable energy, energy efficient development and increased use of public transport 	+/-	+/-	(+)	<p>For Galway the largest emissions are derived from Agricultural (45%)and Residential (17%). Under Alternative 1 the CAP would prioritise these sectors above others. However, whilst the CAP can interact and support agricultural activities it is not the main policy or funding framework this is via the Common Agricultural Policy. Whilst the focus LUCUF can be partly driven by local authorities. Alternative 2 and 3 provide the most holistic approach to climate action with Alt 3 focus on community engagement performing better as it increases awareness and ownership of climate actions via local authority framework.</p>

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<p>Population and Human health</p> <ul style="list-style-type: none"> •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. •Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management 	+/-	+/-	(+)	<p>As recent research¹ has demonstrated, 85% of respondents in the County are worried about climate change and support action with concern about practicality of actions. Environmental issues can be cross cutting with similar levels of concern about water quality issues in local areas (82%). Therefore Alt 1 and Alt 2 present a more top down focus driven under Alt 1 by national policies around agriculture and under Alt 2 by a weaker focus on community scale input and responses.</p> <p>In this scenario, Alt3 performs the best and as it aligns closely with the Galway CDP and supporting plans including LAPS with active travel measures; measures can be brought forward that can generate cumulatively positive effects.</p>
<p>Biodiversity, Flora and Fauna (BFF)•</p> <p>To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species</p> <ul style="list-style-type: none"> • Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function 	+/-	(+)	(+)	<p>Alt 1 with key focus on agriculture, landuse and residential may not provide as many co benefits as under Alt 2 and Alt3 with less focus on nature based solutions and potential positive interactions across the BFF SEOs. Alt 2 and Alt 3 perform well but again Alt 3 performs more strongly in terms of priority areas for mitigation and adaption with stronger community engagement element.</p>

¹ EPA 2023.

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<ul style="list-style-type: none"> Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species Enhance biodiversity in line with the National Biodiversity Strategy and its targets including no net contribution to biodiversity losses or deterioration’. 				
<p>Soil and Geology To protect, maintain and conserve the County’s natural capita</p> <p>Soil and Geology (SG) Protect soils against pollution, and prevent degradation of the soil resource</p> <ul style="list-style-type: none"> Promote the sustainable use of infill and brownfield sites over the use of greenfield within the County Safeguard areas of prime agricultural land and designated geological sites 	0/-	(+)	(+)	Alt 1 would include priority for residential as the third largest sector for county emissions and may contribute to achieving SG 1 in particular. However, the CDP and LAPS also have strong supporting policy objectives around brownfield and reuse so this could be addressed through all Alternatives. Again a multi pronged approach is identified as more consistent with SG SEOS as it is more holistic in scope with greater potential for positive interactions and co benefits. Alt 3 with community engagement also increase scope for interventions around Just Transition and potential projects relating to peatland restoration and raising water table levels.

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<p>Water (W)</p> <ul style="list-style-type: none"> • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and County growth targets in the context of existing and projected water supply and wastewater capacity constraints ensuring the protection of receiving environments • Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposal 	0/-	(+)	(+)	<p>Greater focus and support through agricultural and landuse sectors under Alt 1 would be positive for water quality issues through actions such as increased riparian buffers etc. However, this is driven at larger scale by national policy including the Common Agricultural Policy and at more county/catchment level LAWPRO. Whilst Galway CC can support these they are not the driving agent and under this scenario the co benefits around nature based solutions are less supported as is the more holistic approach under Alt 2 and 3.</p> <p>Under all scenarios, application of CDP and LAP policies and priority actions under the Draft River Basin Management Plan would apply.</p>
<p>Air and Noise (AN)</p> <ul style="list-style-type: none"> • To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture 	0/-	(+)	(+)	<p>Alt 2 and 3 perform more strongly with AQ SEOs in particular around recognising ecosystems and nature based solutions via multi-pronged approach.</p> <p>Re air quality and health, this is very influenced by transport and fuel for heating and would not be maximised under Alt 1.</p>

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<ul style="list-style-type: none"> Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency Promote continuing improvement in air quality Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution Meet Air Quality Directive standards for the protection of human health Significantly decrease noise pollution by 2020 and move closer to WHO recommended level 				
<p>Material Assets</p> <p>Ensure that existing population and planned growth is matched with the required public infrastructure and the required services</p> <p>Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County</p> <ul style="list-style-type: none"> Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy 	-	(+)	(+)	<p>Alt 1 performs the weakest for Material Assets SEOS although for all three, the CDP and LAP policies would apply for landuse projects.</p> <p>As Lat 2 and 3 include multi pronged approaches, measures under these scenarios are more broad and holistic including water conservation, circular economy and community planning.</p>

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
<p>generation mix to ensure security of supply – wind, solar, hydro, biomass, energy from waste and traditional fossil fuels</p> <ul style="list-style-type: none"> Promote the circular economy, reduce waste, and increase energy efficiencies Ensure there is adequate sewerage and drainage infrastructure in place to support new development Facilitate, as appropriate, Irish Water in developing water and wastewater infrastructure 				
<p>Cultural Heritage (CH) 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).</p> <ul style="list-style-type: none"> Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage 	0/-	(+)	(+)	<p>Alt 1 would include priority for residential as the third largest sector for county emissions and may contribute to achieving CH 1 in particular. However, the CDP and LAPS also have strong supporting policy objectives around reuse so this could be addressed through all Alternatives.</p> <p>Again a multi pronged approach is identified as more consistent with CH SEOS as it is more holistic in scope with greater potential for positive interactions and co benefits. Alt 3 with community engagement also increase scope for interventions around renovation of existing buildings and local cultural heritage including via Creative Ireland support measures.</p>

	Alternative 1 Prioritise reducing GHG emissions from largest GHG emitting sectors in the County	Alternative 2 Adopt a multi-pronged approach and focus on a range of priority areas t	Alternative 3 Adopt a multipronged approach - that has a strong community engagement emphasis -	Comment
Landscape To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention	-	(+)	(+)	Alt1 would perform well for L SEOS, especially L1 in terms of landscape scale response and the primary emissions from agriculture, landuse in the County. As under other SEOS, however the potential for the County Council to drive this is limited. Therefore, Alt 2 and 3 perform better given the multiple elements that contribute to landscape and seascape including soil, geology, population , cultural heritage, biodiversity, therefore the multi-pronged approach is more robust for L SEOS and the focus on community action reinforces the environmental performance under Alt 2.

6.3 Preferred alternative and reason for selection

Following the above evaluation and assessment, 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.

7 Assessment of Likely Significant Effects

The purpose of this section of the Environmental Report is to predict and evaluate as far as possible the environmental effects of implementing the draft CAP. Having established the environmental baseline and the key environmental sensitivities for the strategy area in Chapter 4, and the Strategic Environmental Objectives in Chapter 5, an assessment for any potential environmental effects from implementing the draft Strategy can be undertaken.

Two elements of assessment have been undertaken which include:

1. An assessment of the draft actions (See **Annex A**);
2. An assessment of cumulative and in-combination effects (See **section 7.3**).

The assessment process has been undertaken using matrix assessments which reflect ratings in relation to potential significant effects on the environment as a result of implementation. Where there is a combination of these symbols (0/+ or 0/-) this indicates that any effect maybe neutral or positive, or neutral or negative depending on how the objective is delivered. Where negative effects are identified mitigation measures are recommended to either include new objectives, or to amend or include additional text within the Plan objectives. In terms of impacts the following definitions are used:

- Profound: An impact which obliterates sensitive characteristics.
- Moderate: An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.
- Slight: An impact which causes noticeable changes in the character of the environment without affecting its sensitivities.
- Imperceptible: An impact capable of measurement but without noticeable consequences.

Thirdly the potential duration of identifiable impacts is discussed. The following terms are used:

- Short: Impact lasting one to seven years.
- Medium: Impact lasting seven to fifteen years.
- Long term: Impact lasting fifteen to sixty years.
- Permanent: Impact lasting over sixty years.
- Temporary Impact lasting for one year or less.

7.1 Summary of significant effects

TABLE 7-1 SUMMARY OF SIGNIFICANT 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 chance to reuse energy from within the local area, for example: <i>Action GL 2.7 Continue to make energy efficiency retrofits to social housing under the DHLGH-supported Energy Retrofit Programme having due regard to biodiversity and the need to appropriately conserve protected structures.</i></p> <p><i>Objective GL 3 Integrate climate action into the local authority’s policies, plans, strategies and functions, by applying a climate lens to all decision-making processes, ensuring coherence and consistency across different sectors and levels of governance, and mainstreaming climate action into the core business of the local authority. Ensure prioritisation of the decarbonisation zone.</i></p> <p>Reflecting key objectives in the Galway CDP 2022-2028 such as <i>GCTPS 3 Sustainable Transport will support a variety of measures which will reduce car dependency for residents, and will specifically seek to improve access to sustainable transport choices (including responsive and “flexible” modes) for those residents in rural areas of the County.</i> 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 TR 1. 4 Work with communities to identify potential active travel, greenway and public transport projects and support modal shift, and Action TR 1. 5 Support and promote community mobility schemes including bike share schemes, mobility hubs, bike libraries, community EV carsharing and EV charging, carpooling, and community taxis.</i></p> <p>Interactions between active travel support in the CAP, the CDP 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 airborne particles extend beyond human health to the entire terrestrial and aquatic environment (Tositti et al., 2018¹).</p>

¹ 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>In the absence of mitigation, whilst the current Galway CDP 2022 -2028 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.</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 and referencing recent EPA research on coastal resilience and communities (<i>see GL 3.1 and new action recommended to strengthen alignment with the County 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.</p> <p><i>Action LN 2.2 Audit local authority land, carry out ecological/habitat surveys and highlight areas at risk and those suitable for restoration and enhanced carbon storage, also identifying potential wildlife corridors for protection through statutory plans</i></p> <p><i>Action 31:Develop a register of Council owned properties that may be used for Nature based solutions, and implement actions, including the establishment of an annual native tree planting programme, over lifetime of LACAP-</i></p> <p>Action 31 above and Action LN 2.1 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> <p>Actions in particular those under LN2.6 (Updated Biodiversity Action plan) and LN 3.1 are identified as positive for BFF as well as interacting positive 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 these actions.</p> <p>In relation to other actions, such as those relating to landuse such as transport and Decarbonising zone of Aran Islands existing mitigation in the Galway CDP would apply at development management and consenting, for example:</p> <p><i>MCH 1:Cultural and Marine Heritage : To prevent where possible marine development from compromising the quality and significance of marine culture and heritage in accordance with proper planning and sustainable development.</i></p>

Topic	Discussion
	<p><i>MCH 2 :Marine Based Environment: It is a policy objective of the Local Authority to protect and enhance where appropriate marine biodiversity in accordance with proper planning and sustainable development</i></p> <p><i>NHB 1 Natural Heritage and Biodiversity of Designated Sites, Habitats and Species</i></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>
<p>Water resources</p>	<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 can take much longer to ascertain due to the slow recharge rate of this water resource; • 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 2022-2028, 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>BG I 1 Green/blue Infrastructure Network.</i>, flood risk management 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 wastewater including inspection of wastewater in particular.</p> <p>Implementation of the Biodiversity Plan for the County 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. The action is recommended for mitigation to further detail and strengthen overall environmental protection.</p>

Topic	Discussion
Soil and Geology	<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 but in particular for agriculture which amounts to 44% of the GHG emissions at county level.</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><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 around food waste, 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 GL 2.1 Obtain and maintain ISO50001 Energy Management certification by Q4 2024. Establish data management system.</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 Aran IslandsDZ will facilitate peer to peer learning amongst communities and demonstrate successful actions at community and local scale. This is also supported by community capacity building and awareness raising actions as well as leadership from Galway County Council.</p> <p><i>Action GL 4.1 Establish a network of stakeholders and ensure ongoing communication. Cultivate and actively participate in partnerships with regional local authorities and public bodies, enterprise, community, voluntary sectors, third level institutions and the research community. Maximise on potential funding streams for the county and work in partnership to develop and implement Climate Action projects and initiatives. Continue to support existing projects including LEAP, CONNECTED, Cities4Forests etc.</i></p> <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>

Topic	Discussion
Material Assets	<p>Many of the measures provide for mitigation and adaptation with a view to minimising adverse effects of climate change on material assets, and also responding and facilitating behavioural and modal change in energy use and transport. Examples of these include the following:</p> <p><i>Action TR 1.3 Identify opportunities for reallocation of existing road space to promote active travel and improve public space and implement related projects.</i></p> <p><i>Action GL 3.4 Commit that new public housing and buildings incorporate the principles of climate action in terms of design, services and amenities with careful consideration in the choice of materials, roof types (i.e. green roofs), water conservation, taking advantage of solar gain/passive housing, the provision of low-carbon and renewable energy technologies and public transport infrastructure such as bus stops and shelters as appropriate to the scale of the development.</i></p> <p><i>Action LN 1.3 Carry out inspections of domestic wastewater treatment systems, discharge licences, farms and fuel suppliers as per national requirements and as required. Support remediation and mitigation measures required to maintain or achieve good or high quality water status in the county</i></p> <ul style="list-style-type: none"> • Promotion of nature based solutions and SuDs • Climate proofing local authority actions • 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.
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 may be particularly vulnerable to climate change effects. The concentration of built heritage features and historic settlements on the coastline 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:</p> <p>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 capital¹ <p><i>Action EB 2.1 Assess the feasibility of a policy requiring planning applications to include an assessment of the embodied carbon emissions associated with the proposed development and options for nature-based solutions, using a standardised and consistent methodology.</i></p>

¹ Coastal cultural heritage: A resource to be included in integrated coastal zone management [SornaKhakzad^aMarnixPieters^bKoenraadVan Balen^c](#)
[Ocean & Coastal Management](#)
[Volume 118, Part B](#)

Topic	Discussion
	<p><i>Action EB 2.2 Communicate details of case studies and guidance on the upgrade of traditional building to promote as exemplar, ensuring appropriate guidance is provided on the protection of architectural and heritage value and protected species associated with such buildings during upgrade works.</i> 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> <p>Potential actions with Creative Ireland relating to climate change should be explored in the CAP.</p>
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.</p> <p>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.</p> <p>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 measure are recommended for a number of actions to strengthen consideration of landscape.</p>

7.2 Cumulative effects

This section of the Environmental Report provides an outline of the potential cumulative effects on the environment as a result of implementation of the CAP 2024-2029.

Cumulative effects are referred to in a number of SEA Guidance documents and are defined in the EPA SEA Process Checklist as *“effects on the environment that result from incremental changes caused by the strategic action together with other past, present and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space”*. These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources. The assessment of cumulative effects is a requirement of the SEA Directive (2001/42/EC).

The 2004 Guidelines produced by the DECLG outlines that the SEA process is in a good position to address cumulative effects for which the Environmental Impact Assessment process is not equipped to deal with. Due to the strategic nature of the SEA process a forum is provided in which cumulative effects can be addressed. The EPA Strive Report 2007-2013 on ‘Integrated Biodiversity Impact Assessment’ describes cumulative effects as incremental effects resulting from a combination of two or more individual effects, or from an interaction between individual effects – which may lead to a synergistic effect (i.e. greater than the sum of the individual effects), or any progressive effect likely to emerge over time.

- Cumulatively and in combination, several of the CAP Actions encourage a modal shift and in turn gives rise to indirect positive effects, for example by creating more physical activity in terms of travel to work and school, positively affecting air quality with accompanying benefits to both population and human health .
- In addition, this can create a reduction in emissions associated with Particulate Matter and Nitrogen Dioxide. This benefits both human health as well as Biodiversity, flora and fauna and surface water features.
- The majority of the Flood Resilient measures are identified as being consistent and positive across all SEOs, in particular measures that promote natural based solutions such as tree planting and SUDs are all positive across all parameters and can provide multi-functional benefits in the landscape.
- In combination and cumulative effects are particularly relevant to the Nature Based solutions actions which together create long term positive effects across Population, Landscape, Biodiversity, Soil and Geology, Water and Material Assets whilst responding to climate change effects.
- Landuse effects are identified particularly for certain energy and transport measures; including active travel, renewable energy, protection of coast. In the absence of mitigation adverse effects could arise but the compliance with the statutory land use plans notably the County Development Plan will provide appropriate protection.
- In turn, positive short to medium term effects are identified in the case of significant reductions in emissions from transport and residential energy with cross cutting positive effects on air quality with accompanying positive effects on human health, water, habitats and climate.
- Threaded throughout the CAP is the theme of citizen engagement and awareness raising and this is critical to both inform, educate and engage citizens in relation to responding to climate change, whilst also identifying positive measures. Many of the engagement actions should increase public awareness and a sense of responsibility, collective and individual action in

addressing and adapting to climate change. Positive in combination effects are identified for human health around modal shifts, and green infrastructure, behavioural change, tree planting and responding to flood risk. The Carnmore DZ can function as an local example of good practice and support learning and lessons across the county.

- The purpose of the actions within the CAP are to significantly reduce the county's GHG emissions and these actions together, if fully implemented are positive for addressing this significant challenge that requires immediate and urgent implementation of actions.
- Collaboration within the local authority but also with other agencies and departments such as Department of Agriculture, food and marine, locally led agri environment schemes and research with academic institutions should result in positive effects in the medium to longer term.
- A key challenge is assessing how the pace of climate change impacts interact with the CAP actions, potential cascading effects and ensuring that the monitoring is accurate, frequent and able to influence remedial actions.

TABLE 7-2 KEY PLANS CONSIDERED FOR CUMULATIVE IMPACTS

Principal Plans	Comment	Statement
<p>National Planning Framework 2030</p>	<p>The NPF amongst a range of issues, addresses the future development direction of our cities, towns and rural areas. The framework specifically includes:</p> <ul style="list-style-type: none"> • The role of our Cities and Towns • The potential of our Regions • Rural Development • Providing better quality of life for people and communities • Provision of homes to meet future needs • Our coastal and marine areas • Co-ordination of place making with our neighbours • The role of planning in responding to climate change • The context for future infrastructural investment <p>The National Planning Framework seeks to:</p> <ul style="list-style-type: none"> • Guide the future development of Ireland, taking into account a projected 1 million increase in our population, the need to create 660,000 additional jobs to achieve full employment and a need for 550,000 more homes by 2040 • Enable people to live closer to where they work, moving away from the current unsustainable trends of increased commuting 	<p>The Natura Impact Statement for the NPF concludes that subject to the mitigation proposed in the NIS being incorporated, there will be no adverse effects on the integrity of any European Sites as a result of implementation of the NPF.</p> <p>Otherwise the Environmental Report for the NPF identifies a variety of positive, neutral and negative effects in each of the environmental categories. It is therefore difficult to neatly categorise the effects of the NPF on all environmental categories opposite.</p> <p>However Section 8.3.10 Cumulative Impacts of said Report states that ‘the greatest cumulative benefit should be in relation to Population and Human Health’ and otherwise states that ‘there is potential for cumulative negative impacts on receptors such as biodiversity, water, soils, cultural heritage and landscape’.</p> <p>Negative effects arising from the NPF on Biodiversity and Water may also impact on said receptors in Donegal and are thus categorised as negative in the assessment opposite.</p> <p>However, it is unlikely that the NPF will give rise to negative impact on landscape receptors in Galway I given its emphasis on compact growth, and otherwise any negative effect arising from the NPF on soils and cultural heritage elsewhere are unlikely to affect said receptors within the county. Consequently, the impact of the NPF on these receptors is categorised as insignificant. No in-combination impacts were predicted as a result of implementation of the Plan, the revised NPF will be subject to full SEA and AA.</p>

Principal Plans	Comment	Statement
	<ul style="list-style-type: none"> • Secure more compact forms of urban development in all types of settlements • Regenerate rural Ireland by promoting environmentally sustainable growth patterns • Plan for and implement a better distribution of regional growth, in terms of jobs and prosperity • Transform settlements of all sizes through imaginative urban regeneration and bring life / jobs back into cities, towns and villages • Co-ordinate delivery of infrastructure and services in tandem with growth, through joined-up NPF/National Investment Plan and consistent sectoral plans, which will help to manage this growth and tackle congestion and quality of life issues. 	
<p>CAP Strategic Plan 2023-2027 / FoodVision 2030 /</p>	<p>The CAP Strategic Plan is the key mechanism for agriculture and needs to comply with all environmental legislation and the mitigation measures for interventions as detailed in the SEA ER and NIS. The CAP SP provides for annual actions and interventions from 2023-2029 and remedial action should adverse effects arise.</p>	<p>Section 8.5.1 of the SEA ER for the CAP Strategic Plan identifies a variety of positive, negative effects in each SEA parameter</p> <p>Several of the interventions are identified as broadly positive at strategic scale, particularly those conditionality measures such as GAEC 3. Other interventions under the Rural Development Interventions including EIPs, and Cooperation Projects are also positive. This is due to being responsive to local conditions, bottom up and developed with appropriate technical ecological expertise. Cumulatively these measures should give rise to positive effects on SEOs.</p> <p>Interactions between water quality measures such as nutrient management, tree planting may contribute positively to improving water and air quality with accompanying improvements for BFF, where there is a significant uptake at catchment scale in elements such as riparian buffers, co benefits and cross cutting effects could arise. Conversely, low</p>

Principal Plans	Comment	Statement
		<p>uptake or preferential uptake in technological measures only may have a less demonstrable effects on reversing the serious decline in some habitats and species at national scale. The trends and threats from agriculture to biodiversity remain extremely serious and significant and the need to monitor the interventions to assess their effectiveness remains a key issue for the CAP Strategic Plan particularly if it seeks to reflect and support the Biodiversity 2030 Strategy.</p> <p>The interactions between human health and other environmental parameters such as water, material assets, air quality and climate change are less clear and again depend on the interventions being designed as the right measure in the right place to accrue greater overall environmental enhancements. The serious challenges facing farmers and rural dwellers from climate change effects and the ability of the interventions to provide mitigation and adaptation to such effects will rely largely on the uptake, extent and location of range of measures.</p> <p>The potential for cumulative effects relating to water from the interventions could contribute to reversing declines in surface, ground and transitional water bodies. The adherence and full implementation of all GAECs is essential in this regard. The interactions between water quality and PHH, Soil and Biodiversity in particular is very inter dependant and reductions in nutrients inputs, ammonia emissions, combined with measures around peat soils, wetlands and habitats would be positive.</p> <p>Geology and Soils: Broadly positive as a result of the combined effects of GAECs relating to soil organic matter, Cooperation projects, eco-scheme measures and the Straw Incorporation Measure, EIPs. but potential varies according to uptake of voluntary measures to underpin minimum requirements of GAECs and BISS.</p> <p>Climatic Factors and Air Quality: Improved land management practices and measures to reduce emissions associated with the recent increase in overall bovine numbers, and intensification of farming with increased emissions from nutrient management. Potential positive impacts around certain GAECs and targeting of measures in Cooperation Projects and AECMs to support nature based solutions that increase resilience to climate change and improve carbon sequestration. Again, the provision of the Climate Change sectoral targets will be a significant influencing factor.</p>

Principal Plans	Comment	Statement
		<p>Landscape: landscape is particularly vulnerable to cumulative effects arising from interventions and can present as a combination of cumulative adverse effects across a range of other parameters for example water, biodiversity, soil and cultural heritage.</p> <p>Cultural Heritage: interventions under LEADER, Cooperation Projects, EIP as with landscape offer the means to enhance and improve cultural heritage SEOs.</p> <p>Material Assets: the measures relating to improved water quality should result in positive effects on MA should they result in improvements to water quality</p>
<p>Northern and Western Regional Economic and Spatial Strategy 2020-2032;</p>	<p>he RSES Growth Framework provides a clear sustainable strategy for compact growth and delivering those key elements known to inform business location choices. It identifies a pathway through the inclusion of a Metropolitan Area Strategic Plan (MASP) for Galway, tailored Regional Growth Centre Strategic Plans for Sligo, Athlone and Letterkenny (incorporating the strategic cross-border partnership with Derry-Strabane) and the identification of priority actions for Key Towns and places. This region is also defined by its strong connection to our rural areas and rural economies. The RSES provides for the careful management and encouragement of development within rural areas, to ensure that they remain and grow as vibrant communities.</p>	<p>The Natura Impact Statement for the RSES concludes that ‘the NW RSES would not adversely affect the integrity of a European site (whether individually or in combination with other plans or projects) subject to application of all of the mitigation measures identified in this NIR.’ Otherwise, the Environmental Report for the RSES identifies a variety of positive, neutral and negative effects in each of the environmental categories. It is therefore difficult to neatly categorise the effects of the RSES on all environmental parameters and these should be addressed through planning hierarchy and appropriate levels and scale of plans and accompanying environmental assessments.</p> <p>However, Section 8.4 Cumulative Effects of the Environmental Report for the RSES (which takes into account the ‘interaction of regional policy objectives within the RSES’) states that: ‘the greatest cumulative benefit should be in relation to PHH’, and otherwise states that ‘there is potential for cumulative negative impacts on receptors such as biodiversity, water, soils, cultural heritage and landscape,’.</p> <p>Negative impacts on biodiversity, and water arising from the RSES outside Donegal may also negatively impact on said environmental receptors in Donegal as the plan area is inherently linked to wider ecosystems and hydrological systems. (e.g. additional development within the River Foyle or Erne catchments)</p> <p>However, given the emphasis on the ‘sustainable growth of more compact urban and rural settlements’ contained within the RSES it is considered that the strategy will not have a negative effect on landscape receptors Donegal. Consequently, the effect of the RSES on landscape has been rated as insignificant.</p> <p>In addition, negative impacts on receptors which are geographically specific to Donegal such as its soil resource, and cultural heritage are unlikely to be significantly impacted by any negative effects arising from the RSES elsewhere. Consequently, the impact of the RSES on these receptors has rated as insignificant.</p> <p>No in-combination impacts were predicted as a result of implementation of the Plans.</p>

Principal Plans	Comment	Statement
Third Cycle River Basin Management Plan for Ireland 2022-2027 draft	The third and current cycle aims to build particularly on the initiatives of the second cycle, particularly the governance and implementation structures, and to improve the establishment of Irish Water, An Forum Uisce, the Local Authority Waters Programme and the Agricultural Sustainability Support and Advisory Programme.	These objectives support the policies in the CAP. However, any developments that may arise as a result of this plan will be required to have a project level AA and EIA which will assess these in detail and provide suitable mitigation measures where appropriate. The Third Cycle RMP is subject to full SEA And AA. No in-combination impacts were predicted as a result of implementation of the Plans
County Galway Development Plan 2022 - 2028	The CDP was adopted in 2022 and was prepared in accordance with the Planning and Development Act 2000, and was subject to full SEA, AA and SFRA. The plan sets out the overall strategy for planning and sustainable development for the county. Chapter 10 of the plan outlines the aims of the Galway County Council to protect and enhance the natural heritage and biodiversity of designated and non-designated ecological sites and sets out the policies and objectives for this. Chapter 9 Marine and Coastal Management provides additional policy support.	The SEA ER states: These effects would have the potential, if unmitigated, if they occurred, to result in changes in the environment within and beyond County Galway. A variety of the issues covered by the Plan provisions are regional issues which are considered: at Regional Assembly level, in the Northern and Western RSES and by planning authorities across the Region. The solutions to these issues are often regional solutions which are subject their own consenting procedures. Works arising outside of the Plan as a result of providing for new development within the County including those arising as a result of the cumulative provision of development in the wider Northern and Western region would potentially conflict with a number of environmental components, across the wider Northern and Western region and beyond, including: ecology, soil function, the status of water bodies and the landscape. Some of these conflicts would be mitigated by measures which will be integrated into the Plan while some will be mitigated by measures arising out of separate consent procedures. The NIR states: In-combination effects from interactions with other plans and projects was considered in the assessment and the mitigation measures incorporated into the Plan, are seen to be robust to ensure there will be no significant effects as a result of the implementation of the Plan either alone or in combination with other plans/projects. Having incorporated mitigation measures, it is concluded that the Galway County Development Plan 2022-2028 is not foreseen to give rise to any adverse effects on the integrity of any European Site, alone or in combination with other plans or projects ²⁴ . This evaluation is made in view of the conservation objectives of the habitats or species, for which these sites have been designate
Galway County Local Economic and Community Plan (LECP)	These plans were subject to SEA and AA screening and concluded that subject to full	No in-combination impacts were predicted as a result of implementation of the Plans.

Principal Plans	Comment	Statement
2017 -2022; new LECP in prep.	adherence and implementation of measures likely significant effects were not identified.	
County Galway Climate Change Adaptation Strategy 2019-2024	Donegal Council Climate Change Adaptation Strategy (2019-2024 and any subsequent versions). This Plan has been subject to SEA/AA screening and is being replaced by the CAP 2024 -2029	No in-combination impacts subject to full implementation and adherence to mitigation measures were predicted as a result of implementation of the Plans.

8 Mitigation Measures

8.1 Introduction

This chapter outlines the 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. Section (g) of Schedule 2B of the SEA Regulations (as amended) requires *'The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the Plan'*.

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.

The iterative process of the CAP preparation has facilitated the integration of environmental considerations into the CAP. In addition, potential positive effects of implementing the CAP have been and will be maximized and potential adverse effects have been and will be avoided, reduced or offset.

Many impacts will be more adequately identified and mitigated at project and EIA level. In general terms, all proposals for development will be required to have due regard to environmental considerations outlined in this Environmental Report and associated assessments including the Screening for Appropriate Assessment/Natura Impact Report. Proposals for development which are deemed contrary to the environmental objectives contained in the Galway CDP 2017-2023 and draft CDP 2024 -2030 and Local Area Plans will not normally be permitted, and if permitted, not without the appropriate site and development specific mitigation measures. There were also a number of actions associated with the CAP that were identified as potentially generating significant adverse impacts on the environment, and/or were identified as benefiting from additional text amendments. Suggested rewording of these proposals are put forward for consideration and recommended for inclusion in the CAP.

This chapter is structured as follows:

8.2 Environmental Protection Measures in the Galway CDP 2022-2028

8.3 Mitigation measures –amendment of text or new actions in the CAP 2024 -2029.

8.2 Environmental Protection Measures in the Galway CDP 2022-2028

TABLE 8-1 EXISTING ENVIRONMENTAL PROTECTION MEASURES GALWAY CDP 2022 -2028

SEA topic mitigation	Development Plan Objective:	
Biodiversity, Flora and Fauna	NHB 1 Natural Heritage and Biodiversity of Designated Sites, Habitats and Species	<p>Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan.</p> <p>Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999).</p> <p>Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network</p>
	NHB 2 European Sites and Appropriate Assessment	To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant.
	NHB 3 Protection of European Sites	No plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects.*

SEA topic mitigation	Development Plan Objective:	
	NHB 4 Ecological Appraisal of Biodiversity	Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively
	NHB 5 Ecological Connectivity and Corridors	Support the protection and enhancement of biodiversity and ecological connectivity in non-designated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive. .
	NHB 6 Implementation of Plans and Strategies	Support the implementation of any relevant recommendations contained in the National Heritage Plan 2030, the National Biodiversity Plan, the All Ireland Pollinator Plan and the National Peatlands Strategy and any such plans and strategies during the lifetime of this plan
	NHB 7 Mitigation Measures	Require mitigating measures in certain cases where it is evident that biodiversity is likely to be affected. These measures may, in association with other specified requirements, include establishment of wildlife areas/corridors/parks, hedgerow, tree planting, wildflower meadows/marshes and other areas. With regard to residential development, in certain cases, these measures may be carried out in conjunction with the provision of open space and/or play areas.
	NHB 8 Increased Awareness of the County's Biodiversity and Natural Heritage	Facilitate increased awareness of the County's biodiversity and natural heritage through the provision of information to landowners and the community generally, in cooperation with statutory and other partners
	NHB 9 Protection of Bats and Bats Habitats	Seek to protect bats and their roosts, their feeding areas, flight paths and commuting routes. Ensure that development proposals in areas which are potentially important for bats, including areas of woodland, linear features such as hedgerows, stonewalls, watercourses and associated riparian vegetation which may provide migratory/foraging uses shall be subject to suitable assessment for potential impacts on bats. This will include an assessment of the cumulative loss of habitat or the impact on bat populations and activity in the area and may include a specific bat survey. Assessments shall be carried out by a suitably qualified professional and where development is likely to result in significant adverse effects on bat populations or activity in the area, development will be prohibited or

SEA topic mitigation	Development Plan Objective:	
		require mitigation and/or compensatory measures, as appropriate. The impact of lighting on bats and their roosts and the lighting up of objects of cultural heritage must be adequately assessed in relation to new developments and the upgrading of existing lighting systems.
	NHB 10 NPWS & Integrated Management Plans	Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for European sites involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans. The NPWS's current priority is to identify site specific conservation objectives; management plans may be considered after this is done. Where Integrated Management Plans are being prepared by the NPWS for European sites (or parts thereof), the NPWS shall be engaged with in order to ensure that plans are fully integrated with the Plan and other plans and programmes, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations, including those of local communities
	NHB 11 Increases in Visitor Numbers to Semi-Natural Areas, Visitor and Habitat Management	Seek to manage any increase in visitor numbers in order to avoid significant effects including loss of habitat and disturbance, including ensuring that any new projects, such as greenways, are a suitable distance from ecological sensitivities, such as riparian zones. Where relevant, the Planning Authority and those receiving permission for development under the Plan shall seek to manage any increase in visitor numbers and/or any change in visitor behaviour in order to avoid significant effects, including loss of habitat and disturbance. Management measures may include ensuring that new projects and activities are a suitable distance from ecological sensitivities. Visitor/Habitat Management Plans will be required for proposed projects as relevant and appropriate.
Water Resources	WR 1 Water Resources	Protect the water resources in the plan area, including rivers, streams, lakes, wetlands, springs, turloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and water dependant species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the River Basin District Management Plan 2018 – 2021 and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same) and also have regard to the Freshwater Pearl Mussel Sub-Basin Management Plans
	WR 2 River Basin Management Plans	It is a policy objective of the Planning Authority to implement the programme of measures developed by the River Basin District Projects under the Water Framework Directive in relation to: Surface and

SEA topic mitigation	Development Plan Objective:	
		groundwater interaction, Dangerous substances, Hydromorphology, Forestry, On site wastewater treatment systems, Municipal and industrial discharges, Urban pressures, Abstractions.
	WTWF 1 Wetland Sites	Protect and conserve the ecological and biodiversity heritage of the wetland sites in the County. Ensure that an appropriate level of assessment is completed in relation to wetland habitats that are subject to proposals which would involve drainage or reclamation that might destroy, fragment or degrade any wetland in the county. This includes lakes and ponds, turloughs, watercourses, springs and swamps, marshes, fens, heath, peatlands, some woodlands as well as some coastal and marine habitats. Protect Ramsar sites under The Convention on Wetlands of International Importance (especially as Waterfowl Habitat)
	P 1 Protection of Peatlands	Ensure that peatland areas which are designated (or proposed for designation) as NHAs, SACs or SPAs are conserved for their ecological, climate regulation, education and culture, archaeological potential including any ancient walkways (toghers) through bogs.
	P 2 Best Practice in Peatland conservation and management	Work in partnership with relevant stakeholders on all suitable peatland sites to demonstrate best practice in sustainable peatland conservation, management and restoration techniques and to promote their heritage and educational value subject to Ecological Impact Assessment and Appropriate Assessment Screening, as appropriate
	P 3 Framework Plans	Seek to support relevant agencies such as Bord na Mona in advancing rehabilitation works for the peatlands and related infrastructure, to provide for the future sustainable and environmentally sensitive use of peatlands sites including for amenity purposes
Invasive Species	IS 1 Control of Invasive and Alien Invasive Species	It is a policy objective of the Planning Authority to support measures for the prevention and eradication of invasive species
	IS 2 Invasive Species Management Plan	Ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are currently or were previously present, an invasive species management plan will be required. A landscaping plan will be required for developments near water bodies and such plans must not include alien invasive species
	PO 1 Delivery of All Ireland Pollinator Plan	To facilitate the delivery of the All Ireland Pollinator Plan where possible. In the interest of preserving and enhancing biodiversity and working in conjunction with the All Ireland Pollinator Plan - It shall be the policy objective of the Planning Authority to ensure that at least 20% of the green space on all

SEA topic mitigation	Development Plan Objective:	
		housing estates being built will have to be dedicated, developed and maintained as a pollinator zone. The area dedicated can be confined to one single lot or various lots around the site providing that the total area of the lots meets the minimum requirement of 20%. The pollinator zones should be planted with a mix of pollinator friendly-bulbs, self-seeding annuals and biennials, perennials, shrubs, trees, fruit trees and fruit bushes and the majority of this planting should consist of native plants.
Woodland habitats	TWHS 1 Trees, Hedgerows, Natural Boundaries and Stone Walls	Protect and seek to retain important trees, tree clusters and tree boundaries, ancient woodland, natural boundaries including stonewalls, existing hedgerows particularly species rich roadside and townland boundary hedgerows, where possible and replace with a boundary type similar to the existing boundary. Ensure that new development proposals take cognisance of significant trees/tree stands and that all planting schemes developed are suitable for the specific site and use suitable native variety of trees of Irish provenance and hedgerows of native species. Seek Tree Management Plans to ensure that trees are adequately protected during development and incorporated into the design of new developments.
	TWHS 2 Planting of Trees and Woodlands	Encourage and promote in co-operation with Coillte and the Department of Agriculture, Food and the Marine and other organisations, the planting of trees and woodlands, as an important means of contributing to its objective of sustaining, protecting and enhancing the County's biodiversity, natural resources, amenity, landscape and developing tourism product. Encourage community woodlands in urban/urban fringe areas utilising funding available through schemes such as the NeighbourWood and Native Woodland Schemes.
	TWHS 3 Protection of Forestry	Protect all substantial areas of deciduous forest, other than areas of commercial forestry. Proposals for development in these areas should seek to interact with the landscape character of the forested areas and its limits while also enhancing the forested areas so as to increase biodiversity value
Geology	PG 1 Geological and Geo-Morphological Systems	Protect and conserve geological and geo-morphological systems, county geological heritage sites and features from inappropriate development that would detract from their heritage value and interpretation and ensure that any plan or project affecting karst formations, eskers or other important geological and geo-morphological systems are adequately assessed with regard to their potential geophysical, hydrological or ecological impacts on the environment.

SEA topic mitigation	Development Plan Objective:	
Inland Waters	IW 1 Inland Waterways	<p>(a) Protect and conserve the quality, character and features of inland waterways by controlling developments close to navigable and non-navigable waterways in accordance with best practice guidelines.</p> <p>(b) Preserve, protect and enhance Galway’s inland lakes and waterways for their amenity and recreational resource amenity.</p> <p>(c) Protect the riparian zones of watercourse systems throughout the County, recognising the benefits they provide in relation to flood risk management and their protection of the ecological integrity of watercourse systems and ensure they are considered in the land use zoning in Local Area Plans.</p> <p>(d) The Planning Authority will support in principle the development and upgrading of the Inland Waterways and their associated facilities in accordance with legislation, best practice and relevant management strategies, key stakeholders and bodies including Waterways Ireland.</p> <p>(e) Ensure all abstractions of water will be subject to assessment for compliance with the requirements of Article 6 of the Habitats Directive.</p> <p>(f) Seek to provide additional accesses to lake shores and rivers for public rights of way, parking and layby facilities, where appropriate.</p> <p>(g) Developments shall ensure that adequate soil protection measures are undertaken, where appropriate, including investigations into the nature and extent of any soil/groundwater contamination</p>
Green and Blue Infrastructure	GBI 1 New Developments	Require all proposals for large scale development to contribute to the protection, management and enhancement of the existing green/blue infrastructure of the County and the delivery of new green/blue infrastructure, where appropriate by including a green/ blue infrastructure plan as an integral part of any planning application. This plan should identify environmental and ecological assets, constraints and opportunities and shall include proposals which protect, manage, and enhance the development of green infrastructure resources in a sustainable manner
	GBI 2 Green/Blue Infrastructure Network	Facilitate the ongoing development and improvement of a green/blue infrastructure network for urban and rural areas, connecting both natural and semi-natural corridors such as including green spaces, open spaces, green amenities, residual land, rivers and canals. Enhancements along natural features may include the provision of riparian buffers, community food programmes (allotments) and wild areas

SEA topic mitigation	Development Plan Objective:	
		for pollination thus ensuring the provision of natural areas for the benefit of biodiversity, wildlife and climate adaptation.
	BGP 1 Strategic Greenways/Blueways	Support the delivery of sustainable strategic Greenway/Blueway projects in the County in accordance with the Strategy for the Future Development of National and Regional Greenways, enabling legislation, best practice in a manner that is compatible with nature conservation and other environmental policies
	BGP 3 Greenways, Blueways, Peatways and Trails	<p>a) It is a policy objective to support the extension of greenways, blueways, peatways and trails within the county and the integration and linkage of them with other existing / proposed greenways, blueways, peatways and trails both within and outside the county.</p> <p>b) It is a policy objective to support where relevant the concept of Greenways to consider local travel infrastructure, and connectivity to local towns and villages in the design of any Greenway route</p>
	UGG 1 UNESCO Global Geopark Status	To continue to work in partnership with all relevant stakeholders to facilitate and support the ongoing work of the Joyce Country and Western Lakes aspiring Geopark and its application for full UNESCO Global Geopark status. Support initiatives in relation to the Burren Lowlands, The Burren and Cliffs of Moher UNESCO Global Geopark that relate to the county.
Cultural heritage	TWHS 1 Tentative World Heritage Sites	Protect the Outstanding Universal Value of the tentative World Heritage Sites in County Galway namely the Western Stone Forts and the Burren that are included in the UNESCO Tentative List and engage with other national and international initiatives which promote the special built, natural and cultural heritage of places in the County. Collaborate with landowners, local communities and other relevant stakeholders to achieve World Heritage Site status for the sites identified in County Galway
	GBW 1 Walkways and Cycleways	To promote and facilitate the development of walkways and cycleways at appropriate locations throughout the County subject to environmental considerations.
	GBW 2 Future Development of Network of Greenways	To support the delivery of sustainable strategic greenway/blueways projects in the county in accordance with the Strategy for Future Development of National and Regional Greenways
	DS 1 Dark Skies	To investigate the potential for dark skies designated areas at appropriate locations throughout the county

SEA topic mitigation	Development Plan Objective:	
	ATE 1 Additional Tourism Initiatives	To facilitate the sustainable development of the tourism sector and provide for the delivery of a unique combination of tourism opportunities drawing on the network of attractions in County Galway and potential future attractions.
	CTB 3 Slow Tourism	To support the provision of Orientation and Information Points targeted at the 'Slow Tourism' market particularly the assets within Irelands Hidden Heartlands.
	CTB 4 Shannon Tourism Masterplan	To support the implementation of the Shannon Tourism Masterplan and aid in the securing of adequate investment to achieve this
	CTB 5 Destination Towns	(a) To support the promotion of Clifden as the First Destination Town and as the principal visitor Services Centre and hub for Fáilte Ireland's Wild Atlantic Way in the County; (b) Support the designation of additional "Destination Towns" within the county if opportunities arise
Landscape	LCM 1 Preservation of Landscape Character	Preserve and enhance the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation and enhancement, where possible of views and prospects and the amenities of places and features of natural beauty or interest.
	LCM 2 Landscape Sensitivity Classification.	The Planning Authority shall have regard to the landscape sensitivity classification of sites in the consideration of any significant development proposals and, where necessary, require a Landscape/Visual Impact Assessment to accompany such proposals. This shall be balanced against the need to develop key strategic infrastructure to meet the strategic aims of the plan
	LCM 3 Landscape Sensitivity Ratings	Consideration of landscape sensitivity ratings shall be an important factor in determining development uses in areas of the County. In areas of high landscape sensitivity, the design and the choice of location of proposed development in the landscape will also be critical considerations
	PVSR 1 – Protected Views and Scenic Routes	Preserve the protected views and scenic routes as detailed in Maps 8.3 and 8.4 from development that in the view of the Planning Authority would negatively impact on said protected views and scenic routes. This shall be balanced against the need to develop key infrastructure to meet the strategic aims of the plan.
Climate Change	CC 1 Climate Change	Support and facilitate the implementation of European, National and Regional objectives for climate adaptation and mitigation taking into account other provisions of the Plan (including those relating to

SEA topic mitigation	Development Plan Objective:	
		land use planning, energy, sustainable mobility, flood risk management and drainage) and having regard to the Climate mitigation and adaptation measures
	CC 2 Transition to a low carbon, climate-resilient society	It is a policy objective of the Planning Authority to support the transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency
	CC 5 Climate Adaptation and Mitigation	To promote, support and direct effective climate action policies and objectives that seek to improve climate outcomes across County Galway through the encouragement and integration of appropriate mitigation and adaptation considerations and measures into all development and decision-making processes
	CC 9 Mainstreaming Climate Change Adaptation	Galway County Council shall incorporate climate change adaptation into land use planning, building layouts, energy, transport, natural resource management, forestry, agriculture and marine waters.
	CC 10 Green Infrastructure	Galway County Council shall promote the benefit of open spaces and implement the integration of green infrastructure/networks (e.g. interconnected network of green spaces (including aquatic ecosystems) and other physical features on land) into new development and regeneration proposals in order to mitigate and adapt to climate change
Flood Risk	FL 2 Flood Risk Management and Assessment	<p>Comply with the requirements of the DoEHLG/OPW The Planning System and Flood Risk Management Guidelines for Planning Authorities and its accompanying Technical Appendices Document 2009 (including any updated/superseding documents). This will include the following:</p> <p>(a) Avoid, reduce and/or mitigate, as appropriate in accordance with the Guidelines;</p> <p>(b) Development proposals in areas where there is an identified or potential risk of flooding or that could give rise to a risk of flooding elsewhere will be required to carry out a SiteSpecific Flood Risk Assessment, and justification test where appropriate, in accordance with the provisions of The Planning System and Flood Risk Management Guidelines 2009 (or any superseding document); Any flood risk assessment should include an assessment of the potential impacts of climate change, such as an increase in the extent or probability of flooding, and any associated measures necessary to address these impacts;</p>

SEA topic mitigation	Development Plan Objective:	
		<p>(c) Development that would be subject to an inappropriate risk of flooding or that would cause or exacerbate such a risk at other locations shall not normally be permitted;</p> <p>(d) Galway County Council shall work with other bodies and organisations, as appropriate, to help protect critical infrastructure, including water and wastewater, within the County, from risk of flooding.</p>
	FL 6 Surface Water Drainage and Sustainable Drainage Systems (SuDs)	Maintain and enhance, as appropriate, the existing surface water drainage system in the County. Ensure that new developments are adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments. Surface water run-off from development sites will be limited to predevelopment levels and planning applications for new developments will be required to provide details of surface water drainage and sustainable drainage systems proposals.
	FL 7 Protection of Waterbodies and Watercourses	Protect waterbodies and watercourses within the County from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include protection buffers in riverine, wetland and coastal areas as appropriate.
	FL 11 FRA and Environmental Impact Assessment (EIA)	Flood risk may constitute a significant environmental effect of a development proposal that in certain circumstances may trigger a sub-threshold EIA. FRA should therefore be an integral part of any EIA undertaken for projects within the County.
	FL 12 Inland Fisheries	It is a policy objective of the Planning Authority to consult, where necessary, with Inland Fisheries Ireland, the National Parks and Wildlife Service and other relevant agencies in the construction of flood alleviation measures in County Galway
Renewable Energy	RE 6 Oileáin Árann an Energy Transition Community	The Planning Authority shall continue to support Comharchumann Fuinnimh Oileáin Árann (Aran Islands Energy Cooperative), SEAI and Údarás na Gaeltachta in their objective to develop the Islands as being energy independent and becoming Ireland's first energy transition community.
	RE 7 Renewable Energy Generation -Transition to a Low Carbon Economy	To facilitate and support appropriate levels of renewable energy generation in County Galway, considering the need to transition to a low carbon economy and to reduce dependency on fossil fuels

8.3 SEA and AA Mitigation Measures to Galway Climate Action Plan (reworded/new text in blue font)

TABLE 8-2 MITIGATION MEASURES TO GALWAY CLIMATE ACTION PLAN

Action No.	Action Description
new action	In implementing this County Galway Climate Action Plan, ensure compliance with Galway County Development Plan 2022-2028 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.
new action	Galway County 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.
new action	Galway County 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.
	Action GL 2.6 Continue the programme of upgrading of public lighting within County Galway to energy efficient lighting systems while having due regard to the impact of the spectrum of light used on biodiversity
	Action GL 3.1 Encourage and facilitate internal Climate Action initiatives and campaigns including water conservation, energy management habitat creation and waste management.
	Action LN 1.3 Carry out inspections of domestic wastewater treatment systems, discharge licences, farms and fuel suppliers as per national requirements and as required. Support remediation and mitigation measures required to maintain or achieve good or high quality water status in the county including nature based solutions where possible
	Action LN 2.1 Identify priority areas appropriate to receiving environment for habitat restoration, enhancement for wildlife and protection for carbon and biodiversity benefits. Work with stakeholders including landowners to identify opportunities to deliver restoration of habitats and landscapes appropriate to the receiving environment.
	Action LN 2.3 Conduct a tree cover survey and devise and adopt a tree management policy that recognises the ecosystem services provided by existing woodland habitat and seeks to retain and support such habitats
	Action LN 2.4 Implement a pesticide and herbicide reduction plan for Galway County Council.
	Action LN 2.6 Develop and implement an updated Heritage and Biodiversity Action Plan to protect and enhance local biodiversity ensuring climate change is factored into the plan's development and provides appropriate co benefits for biodiversity and climate adaptation and resilience.
	Action LN 3.1 Ensure all LA-led projects consider nature-based solutions including building for biodiversity as appropriate.
	Action EB 1.1 Support renewable energy research and development at the commercial and community scale whilst advocating and exerting influence to ensure such projects

	promote climate action co-benefits and do not contravene relevant environmental protection requirements criteria .
	Action TR 1.9 Expand the greenway network in the County establishing linkages with towns and villages in line with the strategic national cycle network and best practice requirements in the accompanying SEA ER and NIS
	Action DZ 1.11 Support the identification and development of appropriate opportunities related to Microgrid Options with Battery Storage.
	Action AD 1.3 Ensure the continued incorporation of Flood Risk Management and Climate Change Sectoral Adaptation Plans into the spatial planning of the County, having due regard to the need to promote nature based solutions and Sustainable urban Drainage Systems (SuDS), and environmental sensitivities at these locations.
	Action AD 1.8 Work with the OPW and other stakeholders to identify and support Minor and Major Flood Protection and Flood Proofing Schemes throughout the county that supports Nature Based Solutions to increase co benefits.
New action	With respect to DZ actions, ensure that they are aligned with the conservation objectives for the Inishmore Island SAC, Inishmann Island SAC, Inisheer Island SAC and Inishmore SPA

9 Monitoring

9.1 Introduction

It is proposed, in accordance with the SEA Directive, to base monitoring on a series of indicators which measure changes in the environment, especially changes which are critical in terms of environmental quality, for example water pollution levels. Monitoring will focus on the aspects of the environment that are likely to be significantly impacted upon by the implementation of the CAP 2024-2029.

The targets and indicators are derived from the Strategic Environmental Objectives (SEOs) discussed in Chapter Five. The target underpins the objective whilst the indicators are used to track the progress of the objective and targets in terms of monitoring of impacts.

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.

This Climate Action Plan will be implemented by Galway County Council. Implementation of the LACAP 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 draft County Development Plan should cross reference and integrate the KPIs identified for the CAP 2024 -2029.

Key implementation and reporting activities that Galway County 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 9-1 MONITORING TABLE FROM GALWAY CDP 2022 -2028 SEA MONITORING TABLE

Environmental Component (Code)	Indicators	Targets	Sources	Remedial Actions
Biodiversity, Flora and Fauna (BFF)	<ul style="list-style-type: none"> • Conditions of European Sites 	<ul style="list-style-type: none"> • Require all local level land use plans to include ecosystem services and green/blue infrastructure provisions in their land use plans and as a minimum, to have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species • Implement and review, as relevant, County Galway Heritage and Biodiversity Plan 2017-2022, and any superseding plans 	<ul style="list-style-type: none"> • DHLGH report of the implementation of the measures contained in the Habitats Directive- as required by Article 17 of the Directive (every 6 years). • DHLGH National Birds Directive Monitoring Report for the under Article 12 (every 3 years) • Consultations with the NPWS 	<p>Where condition of European sites is found to be deteriorating this will be investigated with the Regional Assembly and the DHLGH to establish if the pressures are related to Plan actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance.</p>

	<ul style="list-style-type: none"> Number of spatial plans that have included ecosystem services content, mapping and policy to protect the ecosystem services when their relevant plans are either revised or drafted 	<ul style="list-style-type: none"> Require all local level land use plans to include ecosystem services and green/blue infrastructure provisions in their land use plans and as a minimum, to have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species Implement and review, as relevant, County Galway Heritage and Biodiversity Plan 2017-2022 and any superseding plans 	Internal review of local land use plans	Review internal systems
	<ul style="list-style-type: none"> SEAs and AAs as relevant for new Council policies, plans, programmes etc. 	<ul style="list-style-type: none"> Screen for and undertake SEA and AA as relevant for new Council policies, plans, programmes etc. 	<ul style="list-style-type: none"> Internal monitoring of preparation of local land use plans 	<ul style="list-style-type: none"> Review internal systems
	<ul style="list-style-type: none"> Status of water quality in Ballinasloe's water bodies 	<ul style="list-style-type: none"> Included under Water below 	<ul style="list-style-type: none"> Included under Water below 	<ul style="list-style-type: none"> Included under Water below
	<ul style="list-style-type: none"> Compliance of planning permissions with Plan measures providing the protection of Biodiversity, flora and fauna 	<ul style="list-style-type: none"> For planning permission to be only granted when applications demonstrate that they comply with all Plan measures providing the protection of Biodiversity, flora and fauna 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Review internal systems
Population and Human Health (PHH)	<ul style="list-style-type: none"> Implementation of Plan measures relating to the promotion of economic growth as provided for by 	<ul style="list-style-type: none"> For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to the promotion of 	<ul style="list-style-type: none"> Internal review of progress on implementing Plan objectives Consultations with DECC 	<ul style="list-style-type: none"> Review internal systems Consultations with DECC

	Chapter 2.3 “Economic and Enterprise Development”	economic growth as provided for by Chapter 2.3 “Economic and Enterprise Development”		
	<ul style="list-style-type: none"> • Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Plan 	<ul style="list-style-type: none"> • By 2020 all citizens will have access to speeds of 30Mbps, and that 50% of citizens will be subscribing to speeds of 100Mbps (Also relevant to Material Assets) • No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan 	<ul style="list-style-type: none"> • Consultations with the Health Service Executive and EPA 	<ul style="list-style-type: none"> • Consultations with the Health Service Executive and EPA
	<ul style="list-style-type: none"> • Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> • Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> • CSO data • Monitoring of Galway County Council’s Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> • Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
	<ul style="list-style-type: none"> • Number of spatial plans that include specific green infrastructure mapping 	<ul style="list-style-type: none"> • Require all local level land use plans to include specific green infrastructure mapping 	<ul style="list-style-type: none"> • Internal review of local land use plans 	<ul style="list-style-type: none"> • Review internal systems
Soil and Geology (S)	<ul style="list-style-type: none"> • Proportion of population growth occurring on infill and 	<ul style="list-style-type: none"> • Maintain built surface cover nationally to below the EU average of 4% 	<ul style="list-style-type: none"> • EPA Geoportal • Compilation of greenfield and 	<ul style="list-style-type: none"> • Where the proportion of growth on infill and brownfield sites is not

<p>brownfield lands compares to greenfield (also relevant to Material Assets)</p>	<ul style="list-style-type: none"> • Instances where contaminated material generated from brownfield and infill must be disposed of 	<ul style="list-style-type: none"> • In accordance with National Policy Objectives 3c of the National Planning Framework, a minimum of 30% of the housing growth targeted in any settlement is to be delivered within the existing built-up footprint of the settlement • To map brownfield and infill land parcels across the Ballinasloe • Dispose of contaminated material in compliance with EPA guidance and waste management requirements 	<p>brownfield development for the DHLGH</p> <ul style="list-style-type: none"> • AA/Screening for AA for each application • Internal review of grants of permission where contaminated material must be disposed of 	<p>keeping pace with the targets set in the NPF and the RSES, the Council will liaise with the Regional Assembly to establish reasons and coordinate actions to address constraints to doing so.</p> <ul style="list-style-type: none"> • Consultations with the EPA and Development Management
<p>Environmental assessments and AAs as relevant for applications for brownfield and infill development prior to planning permission</p>	<ul style="list-style-type: none"> • Environmental assessments and AAs as relevant for applications for brownfield and infill development prior to planning permission 	<ul style="list-style-type: none"> • Screen for and undertake environmental assessments and AA as relevant for applications for brownfield and infill development prior to planning permission 	<ul style="list-style-type: none"> • Internal monitoring of grants of permission 	<ul style="list-style-type: none"> • Review internal systems
<p>Water (W)</p>	<ul style="list-style-type: none"> • Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD. 	<ul style="list-style-type: none"> • Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' • Implementation of the objectives of the River Basin Management Plan 	<ul style="list-style-type: none"> • EPA Monitoring Programme for WFD compliance 	<ul style="list-style-type: none"> • Where water bodies are failing to meet at least good status this will be investigated with the DHLGH Water Section, the EPA Catchment Unit, the Regional Assembly and, as relevant, Irish Water to establish if the pressures are related to Plan actions / activities.

				<p>A tailored response will be developed in consultation with these stakeholders in such a circumstance.</p> <ul style="list-style-type: none"> Where planning applications are rejected due to insufficient capacity in the WWTP or failure of the WWTP to meet Emission Limit Values, the Council will consider whether it is necessary to coordinate a response with the Regional Assembly, EPA
	<ul style="list-style-type: none"> Number of incompatible developments permitted within flood risk areas 	<ul style="list-style-type: none"> Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Where planning applications are being permitted on flood zones, the Council will ensure that such grants are in compliance with the Flood Risk Management Guidelines and include appropriate flood risk mitigation and management measures.
Material Assets (MA)	<ul style="list-style-type: none"> Programmed delivery of Irish Water infrastructure for all key growth towns in line with Irish Water Investment Plan and prioritisation 	<ul style="list-style-type: none"> All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission Consultations with the Irish Water 	<ul style="list-style-type: none"> Where planning applications are rejected due to insufficient capacity in the WWTP or failure of the WWTP to meet Emission Limit Values, the Council will

	<p>programme to ensure sustainable growth can be accommodated</p> <ul style="list-style-type: none"> • Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan 	<ul style="list-style-type: none"> • Where septic tanks are proposed, for planning permission to be only granted when applications demonstrate that the outfall from the septic tank will not – in combination with other septic tanks – contribute towards any surface or ground water body not meeting the objective of good status under the Water Framework Directive • Facilitate, as appropriate, Irish Water in developing water and wastewater infrastructure • See also targets relating to greenfield and brownfield development of land under Soil and broadband under Population and Human Health 	<ul style="list-style-type: none"> • DHLGH in conjunction with Local Authorities 	<p>consider whether it is necessary to coordinate a response with the Regional Assembly, EPA and Irish Water to achieve the necessary capacity.</p>
	<ul style="list-style-type: none"> • Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> • Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> • CSO data • Monitoring of Galway County Council’s Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> • Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
Air (A)	<ul style="list-style-type: none"> • Proportion of journeys made by private fossil fuel-based car compared to 2016 	<ul style="list-style-type: none"> • Decrease in proportion of journeys made by private fossil fuel-based car compared to 	<ul style="list-style-type: none"> • CSO data • Data from the National Travel Survey 	<ul style="list-style-type: none"> • Where proportion of population shows increase in private car use above CSO 2016

	<p>National Travel Survey levels of 74%</p> <ul style="list-style-type: none"> • NOx, SOx, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	<p>2016 National Travel Survey levels</p> <ul style="list-style-type: none"> • Improvement in Air Quality trends, particularly in relation to transport related emissions of NOx and particulate matter 	<ul style="list-style-type: none"> • EPA Air Quality Monitoring • Consultations with Department of Transport and Department of Environment, Climate and Communications 	<p>figures, Council will coordinate with the Regional Assembly, DHLGH, DECC and NTA to develop a tailored response. See also entry under Population and human health above</p>
Climatic Factors (C)	<ul style="list-style-type: none"> • Implementation of Plan measures relating to climate reduction targets 	<ul style="list-style-type: none"> • For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to climate reduction targets 	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> • Review internal systems
	<ul style="list-style-type: none"> • A competitive, low-carbon, climate-resilient and environmentally sustainable economy 	<ul style="list-style-type: none"> • Contribute towards transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050 	<ul style="list-style-type: none"> • Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 • EPA Annual National Greenhouse Gas Emissions Inventory reporting • Climate Action Regional Office • Consultations with DECC (at monitoring evaluation) 	<ul style="list-style-type: none"> • Where targets are not achieved, the Council will liaise with the Regional Assembly and the Eastern and Midlands Climate Action Regional Office to establish reasons and develop solutions.
	<ul style="list-style-type: none"> • Share of renewable energy in transport 	<ul style="list-style-type: none"> • Contribute towards the target of the Renewable Energy Directive (2009/28/EC), for all Member States to reach a 10% share of renewable energy in transport by facilitating the development of electricity charging and transmission infrastructure, in compliance with the provisioning of the Plan 		
	<ul style="list-style-type: none"> • Carbon dioxide (CO2) emissions across the electricity generation, built environment and transport sectors 	<ul style="list-style-type: none"> • Contribute towards the target of aggregate reduction in carbon dioxide (CO2) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built 		

		environment and transport sectors		
	<ul style="list-style-type: none"> Energy consumption, the uptake of renewable options and solid fuels for residential heating 	<ul style="list-style-type: none"> To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating 		
	<ul style="list-style-type: none"> Proportion of journeys made by private fossil fuel-based car compared to 2016 levels 	<ul style="list-style-type: none"> Decrease in the proportion of journeys made by residents of the Ballinasloe using private fossil fuel-based car compared to 2016 levels 	<ul style="list-style-type: none"> CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> Where trends toward carbon reduction are not recorded, the Council will liaise with the Regional Assembly and the Eastern and Midlands Climate Action Regional Office to establish reasons and develop solutions.
	<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
Cultural Heritage (CH)	<ul style="list-style-type: none"> Percentage of entries to the Record of Monuments and Places, and the context these entries within the surrounding landscape where relevant, 	<ul style="list-style-type: none"> Protect entries to the Record of Monuments and Places, and the context of these entries within the surrounding landscape where relevant, from adverse effects resulting from 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Where monitoring reveals visitor pressure is causing negative effects on key tourist features along these routes, the Council will work with Regional Assembly, Fáilte

	<p>protected from adverse effects resulting from development which is granted permission under the Plan</p> <ul style="list-style-type: none"> Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from significant adverse effects arising from new development granted permission under the Plan 	<p>development which is granted permission under the Plan</p> <ul style="list-style-type: none"> Protect entries to the Record of Protected Structures and Architectural Conservation Areas and their context from significant adverse effects arising from new development granted permission under the Plan 	<ul style="list-style-type: none"> Consultation with DHLGH 	<p>Ireland and other stakeholders to address the pressures through additional mitigation tailored to the plans.</p>
Landscape (L)	<ul style="list-style-type: none"> Number of developments permitted that result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Plan. 	<ul style="list-style-type: none"> No developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Plan 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Where monitoring reveals developments permitted which result in avoidable adverse visual impacts on the landscape, the Council will reexamine Plan provisions and the effectiveness of their implementation

Annex A: Assessment matrix

Likely to improve status of SEOs	↑	No likely interaction with /insignificant impact with SEOs	0
Probable conflict with SEOs – unlikely to be mitigated	↓	Potential conflict with SEOs – likely to be mitigated	↕

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Goal 1. Governance and Leadership									
Objective GL1 Demonstrate leadership and innovation in climate action, by setting ambitious targets and indicators, monitoring and reporting on progress and outcomes, reviewing and updating the local authority climate action plan regularly, and exploring new opportunities and solutions for climate action. Identify and secure resources to ensure actions can be implemented.									
Action GL 1.1 Continue to develop and support the Climate Action Steering Group, Climate Action Team, and Energy Team within Galway County Council. Ensure the Climate Action Unit is adequately resourced.	0	↑	0	0	↑	0	0	0	↑
Action GL 1.2 Build expertise within the GCC Management Team, Climate Action Steering Group, Climate Action Team, Energy Team, Climate Ambassadors, Elected Members and Staff by identifying training needs and organising relevant training.	0	↑	0	0	↑	0	0	0	↑
Action GL 1.3 Develop annual Climate Action Implementation	0	↑	0	0	↑	0	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Plans to support delivery of Climate Action Plan.									
<p>SEA comment: For many of these actions, the impacts are consistent with achieving the PHH, AQ C in particular as they relate to climate action through the local authority structure and governance. Actions around capacity building and training are positive for these SEOS directly and indirectly as they increase understanding about climate change and means to address same. For most of the other SEOS, impacts are neutral as they provide no direct landuse actions/impacts or are not identified in terms of location or area. The range of impacts will vary according to the potential use; however, for most of these SEOs, the impacts are considered to be addressed through mitigation at development management level and application of relevant mitigatory measures through the County Development Plan such as NHB 1 Natural Heritage and Biodiversity of Designated Sites, Habitats and Species</p> <p>Actions are recommended for mitigation in response to SEA Scoping submissions and more broadly to improve environmental performance, and increase consideration of ecological effects, nature based solutions. These are below:</p> <ul style="list-style-type: none"> • In implementing this County Galway Climate Action Plan, ensure compliance with the Galway County Development Plan 2022-2028 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. • Galway County 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. • Galway County 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. 									
Objective GL 2 Implement effective energy management and projects across Galway County Council assets aligned with 2030 targets and net zero trajectory.									
Action GL 2.1 Obtain and maintain ISO50001 Energy Management certification by Q4 2024. Establish data management system.	0	↑	0	0	↑	0	0	0	↑
Action GL 2.2 Implement annual retrofit programme for GCC buildings under the SEAI Pathfinder Programme and Community Energy Grant Scheme.	0⇅	↑	0	↑	↑	0	0↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action GL 2.3 Enable staff to utilise practical lower-carbon options for undertaking business travel through provision of electric bikes and vehicles, carpooling, etc. Support the uptake of remote working and online conferencing tools to reduce commuting and business travel.	0	↑	0	0	↑	↑	0	0	↑
Action GL 2.4 Conduct feasibility study and integration of renewable alternative fuel options for Galway County Council vehicle fleet ensuring appropriate regard is had to the sustainability of sourced alternative fuels.	0	↑	0	0	↑	↑	0	0	↑
Action GL 2.5 Prepare and implement a Fleet Management Strategy in line with LA Re-Imagining Transport Study while ensuring sustainability criteria are appropriately considered during procurement processes.	0	↑	0	0	↑	↑	0	0	↑
Action GL 2.6 Continue the programme of upgrading of public lighting within County Galway to energy efficient lighting systems while having due regard to the impact of the spectrum of light used on biodiversity	↕	↑	0	↑	↑	0	0↑	0	↑

Action	BFF	PHH	W	SG	AQ CC	MA	CH	L	IR
<p>Action GL 2.7 Continue to make energy efficiency retrofits to social housing under the DHLGH-supported Energy Retrofit Programme having due regard to biodiversity and the need to appropriately conserve protected structures.</p>	↕	↑	0	↑	↑	0	0↑	0	↑
<p>SEA comment GL2.6, 2.6 and 2.2 are positive in terms of energy efficiency and reduction of GHG so positive interactions for PHH, AQ CC and MA. Positive long term actions for 2.7 for CH, L and SG in particular depending on sensitive approach to increase resilience of built heritage to climate change as well as retrofitting of existing housing that embeds carbon, reduces the need for new materials (circular economy), reduces need for greenfield land and extends the lifetime of building stock. Recent EPA Research (2022) identifies the following priorities in terms of adaptation for the built environment and these should be integrated over the course of the CAP, this is particularly applicable for older buildings and those with protected status:</p> <ul style="list-style-type: none"> • 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 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. • 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, 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. • 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. • 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>Objective GL 3 Integrate climate action into the local authority's policies, plans, strategies and functions, by applying a climate lens to all decision-making processes, ensuring coherence and consistency across different sectors and levels of governance, and mainstreaming climate action into the core business of the local authority. Ensure prioritisation of the decarbonisation zone.</p>									
<p>Action GL 3.1 Encourage and facilitate internal Climate Action initiatives and campaigns including water conservation, energy management habitat creation and waste management.</p>	↕	↑	0	↑	↑	0	0↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action GL 3.2 Support the development, implementation and sharing of best practice in relation to Green Public Procurement. Develop a Green Public Procurement Strategy through the Cities4Forests Programme. Develop a monitoring and reporting tool to ensure GPP is embedded into all Procurements.	0	↑	0	0	↑	↑	0	0	↑
Action GL 3.3 Establish a baseline inventory of the embodied carbon emissions associated with the construction materials used in Galway County Council projects, such as roads, bridges, etc. Determine a feasible target for reducing the embodied carbon emissions. Implement measures to achieve the target.	0	↑	0	0	↑	↑	0	0	↑
Action GL 3.4 Commit that new public housing and buildings incorporate the principles of climate action in terms of design, services and amenities with careful consideration in the choice of materials, roof types (i.e. green roofs), water conservation, taking advantage of solar gain/passive housing, the provision of low-carbon and renewable energy technologies	0	↑	↑	0	↑	↑	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
and public transport infrastructure such as bus stops and shelters as appropriate to the scale of the development.									
Action GL 3.5 Advance the implementation of climate-related objectives in the County Development Plan and Local Authority Renewable Energy Strategy.	↕	↑	0	↑	↑	0	0↑	0	↑
Action GL 3.6 Review draft internal and external plans that arise during the lifetime of the Climate Action Plan and advise on the integration of climate mitigation and adaptation measures where appropriate.	0	↑	↑	0	↑	↑	0	0	↑
<p>SEA comment: Most actions relate to awareness, capacity building and support for existing plans/programmes. No direct landuse effects are identified for several actions and positive actions with PHH, AQCC in particular with accompanying longer term positive interactions for some Material assets around energy, waste.</p> <p>Action GL3.4 is positive for several parameters as it address sustainable approach to new builds including water conservation, consideration should be given to the RIBA Guide Building for Biodiversity and the recent All Ireland Pollinator Plan with Cluid Housing NEW Cluid's - Landscaping & Biodiversity Guide for New Developments » All-Ireland Pollinator Plan (pollinators.ie)</p>									
<p>Objective GL 4 Facilitate climate action throughout the county, by engaging and collaborating with stakeholders and citizens in the development, implementation and review of the local authority climate action plan, and provide them with information and support.</p>									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
<p>Action GL 4.1 Establish a network of stakeholders and ensure ongoing communication. Cultivate and actively participate in partnerships with regional local authorities and public bodies, enterprise, community, voluntary sectors, third level institutions and the research community. Maximise on potential funding streams for the county and work in partnership to develop and implement Climate Action projects and initiatives. Continue to support existing projects including LEAP, CONNECTED, Cities4Forests etc.</p> <p>actions around awareness and communication and collaborative research can generate indirect positive effects across all SEOS in terms of education and understanding but most particularly in terms of PHH, AQ CC and inter- relationships. In turn these can inform proposals and actions that, subject to appropriate evidence based design can be positive across all SEOs also.</p>	0	↑	↑	0	↑	↑	0	0	↑
Goal 2. Land Use and Natural Environment									
Objective LN 1 Support food security and sustainable local food production and ensure a safe and healthy environment that is resilient to the effects of climate change.									
<p>Action LN 1.1 Support farmers in the shift toward low-carbon and climate-resilient agricultural practices. Work with relevant agencies to develop and implement a joined-up awareness/knowledge transfer strategy for the agricultural and</p>	↑ ↓	↑	↑	↑ ↓	↑	↑	0	↑	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
food sectors. Develop a tool kit and training programme for engagement during routine farm visits.									
Action LN 1.2 Work with the BIA Innovation Centre to support climate action in the food and agriculture sector.	↕ ↑	↑	↑	↕ ↑	↑	↑	0	↑	↑
Action LN 1.3 Carry out inspections of domestic wastewater treatment systems, discharge licences, farms and fuel suppliers as per national requirements and as required. Support remediation and mitigation measures required to maintain or achieve good or high quality water status in the county INCLUDING NATURE BASED SOLUTIONS WHERE POSSIBLE	↕ ↑	↑	↑	↕ ↑	↑	↑	0	↑	↑
SEA comment: these actions are broadly positive, providing broad consistent interactions across SEOS including BFF, W and SG. Advice and technical support via ecologists and researcher to ensure support and measures are targeted to the right action in the right place and working with Teagasc and LAWPRO for example LN1.3 is positive for water in particular as this a particular issue in rural counties that can rely heavily on domestic wastewater treatments as well as farms and fuel suppliers, this action is significant in terms of contributing to addressing pressures on surface, ground and transitional water quality.									
Objective LN 2 Protect, conserve and enhance County Galway’s biodiversity and heritage.									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action LN 2.1 Identify priority areas appropriate to receiving environment for habitat restoration, ENHANCEMENT FOR WILDLIFE and protection for carbon and biodiversity benefits. Work with stakeholders including landowners to identify opportunities to deliver restoration OF HABITATS AND LANDSCAPES appropriate to the receiving environment.	↕ ↑	↑	↑	↕ ↑	↑	↑	0	↑	↑
Action LN 2.2 Audit local authority land, carry out ecological/habitat surveys and highlight areas at risk and those suitable for restoration and enhanced carbon storage, also identifying potential wildlife corridors for protection through statutory plans	↑	↑	↑	↑	↑	↑	0	↑	↑
Action LN 2.3 Conduct a tree cover survey and devise and adopt a tree management policy THAT RECOGNISES THE ECOSYSTEM SERVICES PROVIDED BY EXISTING WOODLAND HABITAT AND SEEKS TO RETAIN AND SUPPORT SUCH habitats	↕ ↑	↑	↑	↕ ↑	↑	↑	0	↑	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action LN 2.4 Implement a pesticide AND HERBICIDE reduction plan for Galway County Council.	↕ ↑	↑	↑	↕ ↑	↑	↑	0	↑	↑
Action LN 2.5 Implement a county-wide pollinator conservation initiative, creating and maintaining pollinator-friendly habitats based on the most up-to-date scientific advice from AIPP.	↑	↑	↑	↑	↑	↑	0	↑	↑
Action LN 2.6 Develop and implement an updated Heritage and Biodiversity Action Plan to protect and enhance local biodiversity ensuring climate change is factored into the plan's development and provides appropriate co benefits for biodiversity and climate adaptation and resilience.	↑	↑	↑	↑	↑	↑	0	↑	↑
Action LN 2.7 Support citizen science projects to target climate-sensitive species and habitats	↑	↑	↑	↑	↑	↑	0	↑	↑
<p>SEA Comment: Action LN 2.6 is recommended for mitigation to provide greater focus and specificity around co benefits. The additional text has now been integrated to the body of the text in the CAP to reflect these recommendations. Similarly LN2.3 is recommended for mitigation to support appropriate tree mixes in appropriate locations.</p> <p>NE1.8 provides for reference to the All Ireland Pollinator Plan that provides significant support and detail on the most suitable approaches to managing grasslands for habitats.</p> <p>Other actions such as NE 1.7 and NE 1.3 are positive across all SEOs</p>									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action NE 1.5 supports biodiversity net gain but this should be undertaken in line with Chartered Institute of Ecology and Environmental Management guidance to be undertaken properly, professionally and robustly: Other actions are positive particularly in terms of citizen science projects as a means to engage and encourage awareness and ownership around biodiversity and climate, plus gathering data. LN2.2 audit and identification of wildlife corridors to increase resilience at landscape scale for climate change effects on wildlife.									
Objective LN 3 Support nature-based solutions to mitigate against and adapt to climate change, as well as provide additional benefits such as biodiversity conservation, water security, and human well-being.									
Action LN 3.1 Ensure all LA-led projects consider nature-based solutions including building for biodiversity as appropriate.	0	↑	↑	0	↑	↑	0	0	↑
Goal 3. Energy and Built Environment									
Objective EB 1 Support the development of renewable energy sources, such as wind, solar, tidal, and biomass in suitable locations.									
Action EB 1.1 Support renewable energy research and development at the commercial and community scale whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection requirements criteria .	0	↑	↑	0	↑	↑	0	0	↑
Action EB 1.2 Conduct a feasibility study to identify and assess the potential areas and sources for district heating in the county.	0	↑	↑	0	↑	↑	0	0	↑
Objective EB 2 Ensure the integration of climate action in spatial planning to enable County Galway to transition to a low carbon and resilient society									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action EB 2.1 Assess the feasibility of a policy requiring planning applications to include an assessment of the embodied carbon emissions associated with the proposed development and options for nature-based solutions, using a standardised and consistent methodology.	0	↑	↑	0	↑	↑	0	0	↑
Action EB 2.2 Communicate details of case studies and guidance on the upgrade of traditional building to promote as exemplar, ensuring appropriate guidance is provided on the protection of architectural and heritage value and protected species associated with such buildings during upgrade works.	0	↑	↑	0	↑	↑	0	0	↑
Objective EB 3 Reduce urban sprawl and encourage compact, mixed-use, and transit-oriented development that minimizes the need for car travel and maximizes the use of green infrastructure.									
Action EB 3.1 The provision of public Waste Water Treatment Plants in towns and villages that are not currently served is vital to facilitate compact and sustainable growth. Support Irish Water and the national government to prioritise locations and seek funding for provision of these services.	0	↑	↑	0	↑	↑	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action EB 3.2 Support the upgrade of existing residential and commercial properties to promote sustainable compact growth and regeneration having due regard to biodiversity and the need to appropriately conserve protected structures.	↕	↑	0	↑	↑	0	0↑	0	↑
SEA comments: these actions align very closely with national, regional and county policy to support compact growth, service led development, regeneration of towns and villages. Positive across most SEOS and mitigation through CDP policies provide sufficient and appropriate environmental protection.									
Goal 4. Transport									
Objective TR 1 Support active travel and modal shift to advance sustainable, accessible, and safe mobility.									
Action TR 1. 1 Complete Transportation Modelling across the county based on a sustainable transport and smarter travel approach. Develop and implement Local Transportation Plans for Tuam, Athenry, Loughrea, Gort and East Galway Suburbs. Implement the adopted Ballinasloe Local Transport Plan. Complete Community Transport Studies for Headford, Clifden, Kinvara, Oughterard, Portumna and Maigh Cuilinn. Prepare traffic management plans.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 2 Develop County Walking and Cycling Strategy.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action TR 1. 3 Identify opportunities for reallocation of existing road space to promote active travel and improve public space and implement related projects.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 4 Work with communities to identify potential active travel, greenway and public transport projects and support modal shift.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 5 Support and promote community mobility schemes including bike share schemes, mobility hubs, bike libraries, community EV carsharing and EV charging, carpooling, and community taxis.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 6 Design and deliver new and improved road crossings, cycle lanes and walkways giving priority to disabled users, pedestrians and cyclists.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 7 Ensure adequate road maintenance for active travel users.	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1. 8 Support the Safer Routes to Schools programme and School Streets Initiative,	↕	↑	↕	↕	↑	↑	↑↕	↕	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
providing education and training on cycle buses and walking buses									
Action TR 1.9 Expand the greenway network in the County establishing linkages with towns and villages in line with the strategic national cycle network and best practice requirements in the accompanying SEA ER and NIS	↕	↑	↕	↕	↑	↑	↑↕	↕	↑
Action TR 1.10 Conduct a comprehensive feasibility assessment, including safety, environmental, and cost considerations, for the potential implementation of Dutch-style roundabouts within Galway County Council's transportation infrastructure.	0	↑	↑	0	↑	↑	0	0	↑
Action TR 1.11 Engage with public transport providers to support enhanced public transport outcomes including rural bus service expansion and service interconnectivity.	0	↑	↑	0	↑	↑	0	0	↑
SEA comment A number of actions whilst positive in providing for modal shift, active travels, safer spaces for pedestrians and cyclists are identified as giving rise to landuse effects and would require mitigation through environmental and ecological surveys, assessment, development consent and application of appropriate assessments including EIAR, AA, EclA as appropriate. The new actions around compliance with CDP and requirement for environmental and ecological assessments provides sufficient mitigation.									
Objective TR 2 Support the development and use of low-carbon technologies such as electric vehicles and low-carbon fuels.									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action TR 2.1 Work with the Roads and Transport Dept and regional LAs/CARO to develop and implement a Regional EV Strategy.	0	↑	↑	0	↑	↑	0	0	↑
Action TR 2.2 Support the roll out of EV infrastructure in the county including incorporation of EV infrastructure in streetscape design.	0	↑	↑	0	↑	↑	0	0	↑
Goal 5. Communities and Partnership									
Objective CP 1 Support communities, enterprises, and individuals to access the capacity, skills, and investment necessary to accelerate climate action.									
Action CP 1. 1 Administer Community Climate Action Fund and support communities in the implementation of the projects.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 2 Establish a training, information and support programme for community groups/ community event organisers on Climate Action and Biodiversity. Carry out annual training programme.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 3 Establish network of communities to disseminate information from the DZ areas across the country (Connected Project)	0	↑	↑	0	↑	↑	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action CP 1. 4 Include 'Sustainability and Climate Change' scoring on relevant grant assessments to ensure that community groups/ stakeholders consider and incorporate Climate Mitigation and Adaptation in all their grant funded activities.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 5 Engage with the GAA 'Green Club Programme' on sustainability and climate action projects.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 6 Develop and Implement a Signage Strategy highlighting, educating and encouraging Climate Action.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 7 Support the SEAI Sustainable Energy Communities Program and the development and updating of Energy Master Plans.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 8 Encourage and support low carbon events including external events requiring permissions of GCC. Develop guidelines for events and a checklist to be incorporated into event licensing.	0	↑	↑	0	↑	↑	0	0	↑
Action CP 1. 9 Encourage Climate Action within Creative Arts programmes and support relevant projects.	0	↑	↑	0	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action CP 1.10 Support businesses to become more aware of their climate responsibilities and risks, as well as the commercial opportunities arising from sustainability and evolving consumer sentiment. Support businesses to carry out energy assessments and complete sustainability plans.	0	↑	↑	0	↑	↑	↑	0	↑
Action CP 1.11 Advance the implementation of climate-related objectives and actions in the Tourism Strategy.	0	↑	↑	0	↑	↑	↑	0	↑
Action CP 1.12 Support the Green Schools initiative and enable an increase in the number of schools actively participating	0	↑	↑	0	↑	↑	↑	0	↑
Objective CP 2 Foster social inclusion and cohesion by engaging diverse stakeholders, addressing the needs of vulnerable groups, and promoting a just transition to a low-carbon economy.									
Action CP 2.1 Actively seek funding through the 'EU Just Transition Fund' programme with a focus on Climate Action measures.	0	↑	↑	0	↑	↑	↑	0	↑
Action CP 2.2 Work with Slainte Care programme on Climate Action in Marginalised Communities focusing on Energy Reduction and Food Waste Management to save money for individuals and promote climate action.	0	↑	↑	0	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQ CC	MA	CH	L	IR
Action CP 2.3 Develop and implement an updated Local Economic and Community Plan ensuring climate change is factored into the Plan's development.	0	↑	↑	0	↑	↑	↑	0	↑
No landuse effects identified for a number of actions as they no specific location/project identified at strategic level. However, positive medium term interactions with PHH,MA, AQ CC around energy poverty, circular economy with indirect positives associated with SG Just Transition and social inclusion is significant to ensure marginalised and vulnerable groups are included in climate action.									
Goal 6. Circular Economy									
Objective CE 1 Support communities, businesses and individuals to reduce the generation of waste and increase the quantity of waste reused and recycled.									
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.	0	↑	↑	0↑	↑	↑	↑	0	↑
Action CE 1.2 Implement a pilot project focused on reducing single-use coffee cup consumption with the aim of subsequently scaling successful strategies across the county.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action CE 1.3 Implement initiatives to continue to reduce, reuse and recycle waste across the county in partnership with the private sector e.g. increased	↑	↑	↑	0↑	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
number of public recycling bins, increased number of water fountains, expanded textile/glass collection.									
Action CE 1.4 Assess Construction & Demolition Waste Management Plans for proposed developments to ensure all potential waste streams are identified at an early stage and appropriate measures put in place to promote prevention, reuse, recycling and recovery of waste in line with the waste hierarchy.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action CE 1.5 Investigate the potential for the reuse of waste materials from roads in new construction projects.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Objective CE 2 Ensure waste is properly managed and reduce the quantity of waste that is sent to landfill or incinerated.									
Action CE 2.1 Support the roll out of the segregated brown bin collection systems across the County to enable recovery of biomethane in line with the National Waste Management Plan for a Circular Economy.	↑	↑	↑	0↑	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action CE 2.2 Carry out inspections of permitted waste collectors and waste facilities and illegal waste activities and carry out enforcement action as required.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action CE 2.3 Identify households who currently don't have a standard waste collection service in place, and determine how they are managing their waste. Inspect commercial premises to ensure compliance in relation to waste segregation and in particular food waste.	↑	↑	↑	0↑	↑	↑	↑	0	↑
SEA comment: circular economy actions, enforcement around illegal waste and dumping, and piloting of actions are positive across all parameters as it reduces resource use. Litter and waste in particular can have profound long to medium term effects on the receiving environment ranging from pollution of surface and groundwater bodies, adverse effects and injury to species from plastic pollution, bioaccumulation in water and species as waste moves into coastal and marine waters. Awareness raising and behavioural change is essential to support these actions									
Goal 7. Decarbonisation Zone									
Objective D 1 Reduce carbon emissions and promote sustainable development on the Aran Islands by implementing and supporting a range of measures that will reduce greenhouse gas emissions, increase energy efficiency, and promote the use of renewable energy sources, with the aim of reducing the islands' carbon footprint.									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action DZ 1. 1 Establish a stakeholder group within the Decarbonisation Zone, working with established community organisations already engaged in Climate Action, and ensure ongoing engagement and cooperation. Develop a Vision for the Islands	0	↑	↑	0↑	↑	↑	↑	0	↑
Action DZ 1. 2 Seek funding to retrofit all social housing within the Decarbonisation Zone.	0	↑	↑	↑	↑	↑	↑	0	↑
Action DZ 1. 3 Facilitate and support the development of group approaches for residential and commercial energy assessments, retrofit, renewable heating, and solar installation both within and outside the Decarbonisation Zone. Support Gníomhaireacht Fuinnimh an Iarthar (GFI) Energy Agency.	⇅	↑	↑	↑	↑	↑	↑	0	↑
Action DZ 1. 4 Support Irish Water to identify baseline emissions related to water delivery and treatment, update baseline emissions assessment and identify opportunities to reduce associated emissions. Assess risks related to drought conditions.	0	↑	↑	↑	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action DZ 1. 5 Improve understanding of emissions related to agriculture and LULUCF and update baseline emissions assessment .	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1. 6 Assess the feasibility of providing public drinking water fountains on the three islands.	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1. 7 Work with the local community to identify potential projects to support active travel including 'bike libraries', 'bike shelters', charging facilities, safety measures, and seek funding for implementation.	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1. 8 Explore opportunities for the development of electric car sharing schemes and the provision of (portable) electric chargers at Ros a' Mhíl Ferry Port and Connemara airport.	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1. 9 Support the identification and development of appropriate community energy facilities.	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1.10 Support research projects and national / EU funding applications related to low emission alternatives for ferry and air travel.	0	↑	0	0	↑	↑	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action DZ 1.11 Support the identification and development of appropriate opportunities related to Microgrid Options with Battery Storage.	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1.12 Identify appropriate policy objectives related to renewable energy generation within the Decarbonisation Zone for consideration in the next iteration of the County Development Plan	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1.13 Investigate potential of increasing the public bus service	0	↑	0	0	↑	↑	0	0	↑
Action DZ 1.14 Investigate feasibility of composting/Anaerobic Digestion on Inis Meáin and Inis Oírr	0	↑	0	0	↑	↑	0	0	↑
<p>Many of the DZ actions are positive across SEOS, as they provide for climate change mitigation and adaption but support a locally supported approach. A number of actions are recommended for mitigation measures again to provide for more robust environmental performance and to more clearly define how environmental resources are considered through implementation. Furthermore, DZ 1.11 recommended for mitigation to provide more targeted response to ensure appropriate opportunities are identified. Security of energy supply from a renewable resources as well as the seasonal constraints on water capacity is recognise in the DZ actions and measures to address same. Some measures relating to exploration of /research are not identified as providing direct landuse effects curenlty but positive indirect impacts re CC AQ.</p> <p>Given the significant ecological, cultural and landscape resources of the islands, sensitive approach led by communities of the island is important as well as application of relevant environmental protection measures in the Galway CDP.</p> <p>A new mitigation measure is recommended for the DZ</p> <p>With respect to DZ actions, ensure that they are aligned with the conservation objectives for the Inishmore Island SAC, Inishmann Island SAC, Inisheer Island SAC and Inishmore SPA</p>									
Goal 8. Adaptation to Climate Risk									

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Objective AD 1 Increase the resilience and adaptive capacity of the local authority and the local community to the current and projected impacts of climate change, by identifying and addressing climate risks and vulnerabilities and implementing adaptation actions that are aligned with the national adaptation framework.									
Action AD 1.1 Carry out a risk assessment of the likely impacts of climate change on key infrastructure, isolated areas and the built environment and seek to mitigate the risk . Develop a register of critical infrastructure, systems and assets at risk from existing and projected climate events.	↑ ↓	↑	↑	0↑	↑	↓ ↑	↑	0	↑
Action AD 1.2 Collaborate with Government organisations to provide capital measures for identified priority areas incorporating nature based solutions, biodiversity and water quality enhancement.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action AD 1.3 Ensure the continued incorporation of Flood Risk Management and Climate Change Sectoral Adaptation Plans into the spatial planning of the County, having due regard to the need to promote nature based solutions and Sustainable URBAN Drainage Systems (SuDS), and environmental sensitivities at these locations.	↑ ↓	↑	↑ ↓	↓ ↑	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action AD 1.4 Develop and implement annual Climate Adaptation Strategies for Regional and Local Roads.	↕	↑	↕	↕	↑	↑	↑	0	↑
Action AD 1.5 Identify and implement operational measures necessary to protect critical infrastructure/equipment from climate events, and develop any necessary maintenance/upgrade programmes to address climate risk.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action AD 1.6 Promote and encourage community involvement in the retrofit of SuDS in existing developments, maintaining community rain gardens, discourage hard paving in gardens and retrofit raingardens / water butt installations.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action AD 1.7 Identify opportunities for increasing the resilience of the transport network through the use of materials that are more resistant to adverse weather.	↑	↑	↑	0↑	↑	↑	↑	0	↑
Action AD 1.8 Work with the OPW and other stakeholders to identify and support Minor and Major Flood Protection and Flood Proofing Schemes throughout the county that supports Nature	↑↕	↑	↑↕	0↑	↑	↑	↑	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Based Solutions to increase co benefits.									
Action AD 1.9 Support private group water schemes to identify drinking water sources vulnerable to climate change and to develop source protection or alternative sources in order to maintain water quantity and quality levels	↑	↑	↑	0↑	↑	↑	↑	0	↑
SEA comment: AD 1.2 is positive for capital works to support NBS projects, these should be guided and informed by a robust evidence base and the application of appropriate NBS – in this regard refer to environmental protection measures in the CDP as well as reference such as the Grow Green Compendium of Nature Based Solutions (2020) is a useful guide with resources and case studies. Mitigation is recommended for Action AD1.9 re OPW. Other actions are positive for several SEOS given the cross cutting nature of these actions									
Objective AD 2 Ensure an appropriate, coordinated and resourced Emergency Response, and ongoing cooperation with stakeholders, during climate-related emergencies and events.									
Action AD 2.1 Review Major Emergency Plan and other relevant risk management plans to ensure incorporation of up-to-date climate risk information	0	↑	0	0	↑	↑	0	0	↑
Action AD 2.2 Identify contingency plans for climate events that have the potential to impact critical infrastructure, the failure of which would have major consequences and/or a cascading effect on other services. Prepare strategic wildfire management plan for high-risk areas. Provide clear communication to communities.	0	↑	0	0	↑	↑	0	0	↑

Action	BFF	PHH	W	SG	AQCC	MA	CH	L	IR
Action AD 2.3 Review / create countywide low temperature (snow & frost) policies for roads and footpaths. Review current procedures / resourcing for summertime tree falls.	0	↑	0	0	↑	↑	0	0	↑
Action AD 2.4 Following severe weather events assess the safety of Roads and Bridges and carry out repair and reinstatement as required.	0	↑	0	0	↑	↑	0	0	↑
Action AD 2.5 Capture the impact of extreme weather events by integrating existing incident recording and management systems including WIRE and SWEMS, carry out training and record incidents.	0	↑	0	0	↑	↑	0	0	↑

SEA comment; data collection and review whilst not directly generating landuse effects allows for informed responses and in particular given the potential for in combination effects associated with cascading effects of climate change. Critical infrastructures such as wastewater, water supply, energy for key services etc are all essential for functioning and depending on location are vulnerable to extreme weather events. Positive interactions with PHH, AQ C and MA SEOs in particular.

