

Strategic Environmental Assessment Statement of the Galway County Climate Action Plan 20242029

FEBRUARY 2024

Table of Contents

1 STRA	TEGIC ENVIRONMENTAL ASSESSMENT STATEMENT	1
1.1	Introduction	1
1.2	HOW ENVIRONMENTAL CONSIDERATIONS AND THE ENVIRONMENTAL REPORT WERE FACTORED	
INTO T	HE PLAN AND HOW SUBMISSIONS/CONSULTATIONS WERE TAKEN INTO ACCOUNT	1
1.2.1	Scoping Consultation	2
1.2.2 1.3	Preparation of Galway County CAP 2024 -2029 DRAFT CAP 2024 -2029 STAGE	8 18
1.4	APPROVAL OF THE CAP	19
2 REAS	ONS FOR CHOOSING THE CAP AS ADOPTED, IN LIGHT OF OTHER REASONABLE	
ALTERN	NATIVES CONSIDERED	.20
2.1.1	Key environmental challenges at city scale	. 20
2.1.2	Climate Hazard Impacts	. 20
	Preferred alternative TORING MEASURES	

This report has been prepared by Minogue Environmental Consulting Ltd with all reasonable skill, care and diligence. Information report herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is prepared for Galway County Council and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

1 Strategic Environmental Assessment Statement

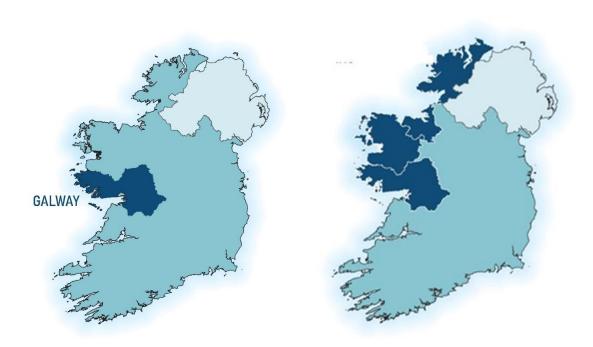
1.1 Introduction

A Strategic Environmental Assessment was undertaken on the Galway County Climate Action Plan (CAP)2024-2029 in order to comply with the SEA Directive. Strategic Environmental Assessment (SEA) is the formal evaluation of the likely significant environmental effects of implementing the Development Plan and is carried out at each stage of the Plan preparation process. The SEA Environmental Report (2023) accompanies the Galway County CAP and contains the findings of this assessment. An SEA Statement is the final aspect of the SEA process. The Strategic Environmental Assessment Guidelines, Assessment of the Effects of Certain Plans and Programmes on the Environment (DEHLG 2004) sets out that the purpose of the SEA Statement is to summarise the following:

- How environmental Considerations and the Environmental Report were factored into the Plan;
- How submissions/consultations were taken into account;
- Reasons for choosing the Plan as adopted, in light of other reasonable alternatives considered;
- Monitoring Measures.

Figure 1.1 below presents the plan area within the Atlantic Seaboard North CARO.

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



1.2 How Environmental Considerations and the Environmental Report were factored into the Plan and how Submissions/Consultations were taken into account

SEA was integrated into the various stages of the plan making process and guided the preparation of alternative scenarios, and actions across several themes including governance and leadership, land use and natural environment, and decarbonizing zone amongst others.

The SEA process was carried out having regard to international and national legislation, strategies, plans and guidelines on environmental protection and sustainable development. Submissions received from Environmental Authorities were also taken into account in the drafting of the Galway

County CAP and Environmental Report. Recommendations from environmental assessments relating to European sites also informed the SEA process. The specific steps taken were as follows:

1.2.1 Scoping Consultation

Galway County Council formally consulted with Environmental Authorities during the 'scoping' stage of the SEA process, issued to the statutory environmental authorities from 27th September to 25th October 2023. This consultation identified the range of environmental issues and the level of detail to be included in the Environmental Report.

Table 1-1 Summary of Scoping Submissions from Environmental Authorities

Consultee	Summary of comments	SEA Response
EPA	The scale of the challenge facing Ireland to address climate change is significant, as highlighted in our State of Environment Report 'Ireland's Environment - An Integrated Assessment 2020' 1 (EPA, 2020). We urgently need to accelerate action to reduce our greenhouse gas emissions and implement adaptation measures to increase our resilience to climate change.	Noted.
	We welcome that the Plan will set out a framework of climate actions to be carried out by Galway County Council, in collaboration with other key stakeholders, over the five-year period from 2024 to 2029. This includes establishing climate action related strategic goals, high level objectives to support the delivery of these goals and also actions that are time-bound, measurable and focused on local level climate action.	
	We acknowledge that draft strategic goals look to address energy, the built environment and related infrastructure, transportation, natural environment and green infrastructure, Economic development and green enterprise/business, community resilience and just transition, and Governance related aspects. We also acknowledge that the Plan will take account of both climate mitigation and climate adaptation actions. We recognise the importance of ensuring that the National Transition Objective is underpinned by a clean, healthy and well-protected environment.	
	It is important, in developing and implementing the Plan, that it is set within the context of a wider and more integrated approach to environmental protection.	Noted, and agreed.
	We note that the Plan will progress the climate adaptation and mitigation required at a local level and will support - a clear pathway to implement national climate policy locally and prioritise action on evidence-focused climate measures that need to be taken.	Noted, the SEA and AA has influenced the CAP and provided additional recommended actions as well as amendment of existing actions to
	The SEA should play a key role in ensuring that this is achieved and should inform decision-making around the assessment and selection of actions and measures. The SEA should also assist in identifying ways to maximise the potential co-benefits of climate related measures for air quality, human health, biodiversity, water quality and other interrelated areas (i.e. win-win solutions).	enhance overall environmental performance of the CAP. These include co benefits and cross cutting mitigation measures.
	A key role of SEA is in assessing and informing the selection and refinement of actions and measures that maximise the co-benefits of climate actions for the wider environment and society. This should be highlighted in the SEA Report and the Plan	

Consultee	Summary of comments	SEA Response
	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. 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	Relevant sectoral climate action and adaptation plans are considered within Chapter 3 and 4 of this SEA ER.
	the Plan.	Noted, agreed.
	The Plan and SEA should consider the recent Climate Council Annual Review report, which is available at: https://www.climatecouncil.ie/councilpublications/annualreviewandreport/CCAC-AR2023-FINAL%20Compressed%20web.pdf	Relevant objectives from national, regional and county plans are considered and aligned with as relevant.
	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.	
	Greenhouse Gas Emissions 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 considered. 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	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.
	Climate Adaptation 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	The cumulative effects of adaptation measures are considered in Chapter 7 of this SEA.
	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 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	Will be considered and integrated as appropriate.

Consultee	Summary of comments	SEA Response
	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	
	Water Quality	Noted, will be considered.
	The Plan should consider 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.	
	Air quality	Noted, will be considered given localised
	The Plan should consider 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	transport emissions and impacts on biodiversity, water and human health.
	Ireland and may be useful to consider. Data on levels of atmospheric pollutants from the EPA's	biodiversity, water and numan health.
	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.	
	Recent EPA Climate change related publications Some recent climate change publications that may be useful to consider in preparing the SEA and	Noted, will be reviewed and included as appropriate.
	the Plan are shown below: -	арргорпасс.
	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)	
	(1330 2030) (EFA, 2023)	
	Additionally, further reports/publications are available at: can be consulted at	
	https://www.epa.ie/publications/monitoringassessment/climate-change/.	CEA mitigation magazura includes this
	Research report 429: Building Coastal and Marine Resilience in Ireland (EPA, 2023) may be useful to	SEA mitigation measure includes this publication re coastal and marine
	consider. It discusses the need for identification and increased awareness of climate change risks to	resilience.
	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	
	EPA State of the Environment Report Our State of Environment Report, Ireland's Environment - An	Noted
	Integrated Assessment 2020 (SOER2020) identifies thirteen high level 'Key Messages for Ireland'.	
	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	

Consultee	Summary of comments	SEA Response
	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.	
	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.	
	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).	
	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. Biodiversity: The Plan should also seek to protect existing green and blue infrastructure and key ecological corridors from inappropriate development. Water Resources: With regards flooding, the Plan should consider the need for appropriate zoning	These topics are considered in Chapter 4, 7 and mitigation measures recommended as appropriate.

Consultee	Summary of comments	SEA Response
	and development of lands to avoid incompatible land uses in areas at risk of significant flooding. 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. 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. 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. 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. 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	
Department of Housing, Heritage and Local Government	Having considered the SEA Scoping Report, the Department makes the following observations: 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</i> 1.1.3 of the National Biodiversity Action Plan 2017 – 2021. This objective requires all Public Authorities and private sector bodies to 'move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure'. 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 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,	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 Galway CDP 2022-2028) includes the following: 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 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

Consultee	Summary of comments	SEA Response
	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.	and Ecological assessments of renewable energy
	5. Measures should be included in the SEA for collective scientific analysis of post planning species monitoring reports submitted to the Local Authority to ascertain positive and negative species	2. noted, issue of ammonia is highlighted in Section 4 Key issues
	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	 Carbon balance calculations are noted. the CAP actions support and do not replace the Renewable Energy Strategy for the Galway CDP 2022-2028. Noted, this is considered within the CAP
National Seafood Centre Dept of Agriculture, Food and Marine	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	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
	environmental measures.	Sectoral Adaptation plans are referenced in Ch 3
	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.	Noted, the Seafood Development Programme reflects some of these
	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 to accelerate the energy transition in the fisheries	actions. Just transition needs are noted.
	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	

Consultee	Summary of comments	SEA Response
	Transition for the sea fisheries and aquaculture sectors in their Climate Action Plans.	
Geological Survey of Ireland	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. Recommended datasets include: Geoheritage, Groundwater, Geotechnical, Geohazards,	Noted the datasets have been considered through the SEA process and applied as appropriate.
	Recommended datasets include: Geoheritage, Groundwater, Geotechnical, Geohazards, Geothermal energy, Natural resources plus research projects.	

1.2.2 Preparation of Galway County CAP 2024 -2029

As part of the Environmental Report, baseline data was provided on the current state of the environment in and adjacent to the plan area of Galway County. This was collated through a review of currently available data, as recommended in SEA Guidelines and related to indicators set out in the SEA Directive: biodiversity flora and fauna; population and human health; soil; water; air and climatic factors; material assets; cultural heritage and landscape. Recommendations from environmental assessments relating to European sites also informed the preparation of the Strategy and Environmental Report, these assessments are contained in the *Natura Impact Statement (NIS)*. The SEA ER also applied ecosystem services from NPWS mapping to demonstrate water retention, filtration and carbon in soil at plan level. Where SEA Scoping submissions highlighted research, for example EPA recommendations on research around coastal communities resilience to climate change and the attitudes to climate change (Climate Change in the Irish Mind - Support for Climate Policies' and Climate Change in the Irish Mind - Climate Risk Perceptions), these were integrated to the baseline of the SEA and discussion of significant impacts.

Baseline information and consideration of alternatives were reviewed from other strategies and plans, namely the Galway County Development Plan 2022 -2028, other concurrent climate action plans being prepared across other local authorities and supporting environmental assessments (SEA and AA).

The key environmental issues considered included the following and the SEA ER provided key recommendations to address same (see table 1. 2 below)

Table 1-2: Key Environmental Issues

Indicator Biodiversity Flora and

Fauna

Summary of Issues and SEA Recommendations

- 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. 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.
- In Galway County 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. 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 processes², across terrestrial, marine and freshwater ecosystems, that underpin ecosystem functioning and support services to people, 82% showed evidence of impact from climate change.

SEA recommendation:

 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.

¹ Botanical society of Britain and Ireland Plant Atlas 2020. <u>BSBI-Plant-Atlas-2020-press-release-Ireland-FINAL.pdf</u>

² Biodiversity Climate change sectoral adaptation plan NPWS 2019

Indicator	Summary of Issues and SEA Recommendations
maicator	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.
 Population	Climate ³ change can influence health through altering exposure to stressors such as
•	
and Human Health	extreme weather events; vector-, food- and waterborne infectious diseases; changes
пеанн	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, including 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.
	 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 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) research ⁴ 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. At County scale 85 % of respondents were worried
	about climate change.
	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

 3 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.

⁴ 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

Indicator	Summary of Issues and SEA Recommendations
	addressing the challenges presented by climate action. Just Transition mechanisms
	and access to support for same.
Soil and Geology	 Maintaining and enhancing soil function and its carbon storage role where possible, recognising the essential role soils, and particularly functioning peatlands (peat soils present in the western part of the plan area) 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. 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. 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.
Water	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. 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. The second
	 Threat of coastal squeeze of inter-tidal habitats where hard defences exist. The development of flood forecasting systems in conjunction with community. SEA Recommendations
	Landscape consideration of water through LAWPRO and catchment management
	 Support for nature-based solutions through the catchments Management to 'slow the flow' and increase overall resilience of the ecosystems.
	Research and assessment of risks and then supporting actions to achieving Water

Indicator Framework Directive Objectives from climate change impacts. Air and Climatic Factors These have been identified as cross cutting impacts across all the SEA topics scope SEA ER and are presented throughout the document. Climate change is impacting ecosystems through changes in mean conditions and variability, coupled with other associated changes such as increased ocean acidificatmospheric carbon dioxide concentrations. It also interacts with other presecosystems, including degradation, defaunation and fragmentation. At the secosystems can also assist in the mitigation of, and adaptation to, climate change. SEA recommendations Actions in the CAP should be cross cutting and encompass all the sectors for 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 environmental topics and strong evidence based approach to solutions is recommenced that is clear that reaching the 2030 target requires implementation of policies of emission reductions across all sectors in the short term. Current decarbonisation being outpaced by increased energy demand across the economy and dependence fuels for energy generation. A continued lack of delivery of large-scale practical decarbonise activities in all sectors will see an exceedance of the first two carbon busines.	I in climate ication and essures on same time, or emission for other ded.
Air and Climatic Factors These have been identified as cross cutting impacts across all the SEA topics scope SEA ER and are presented throughout the document. Climate change is impacting ecosystems through changes in mean conditions and variability, coupled with other associated changes such as increased ocean acidificatmospheric carbon dioxide concentrations. It also interacts with other presecosystems, including degradation, defaunation and fragmentation. At the secosystems can also assist in the mitigation of, and adaptation to, climate change. SEA recommendations Actions in the CAP should be cross cutting and encompass all the sectors for 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 environmental topics and strong evidence based approach to solutions is recommend EPA data is clear that reaching the 2030 target requires implementation of policies of emission reductions across all sectors in the short term. Current decarbonisation being outpaced by increased energy demand across the economy and dependence fuels for energy generation. A continued lack of delivery of large-scale practical	I in climate ication and essures on same time, or emission for other ded.
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Material Flood events and possible consequent risk of subsidence may have a significant	
Assets critical infrastructure such as roads, rail, electricity, water and communications. T	
would have a potential impact on productivity, economic confidence and gen	
wellbeing. Hotter summers could also place an additional stress on key infrastructure	
 High temperatures can result in Hot-weather-related changes in demand 	
daily and peak demand). Higher precipitation levels can result in mor	
water/wastewater asset flooding, asset loss and potential for env	
pollution as well as increased drawdown in the autumn/winter for floo	
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 po 	tential for
environmental pollution. Interruption to business continuity ⁵ .	
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.	,
 Actions relating to circular economy, food waste and local food production. 	
Cultural • The direct effects of climate change on heritage may be immediate or or	
heritage Thus, damage from catastrophic events such as floods and storms at	
increase at the same time as slow-onset environmental deterioration m	
moreage at the same time as slow onset chivil online action attorn in	. Comanionio.

 $^{\it 5}$ Water Quality and Water Services Infrastructure Climate Change Sectoral Adaptation Plan

Indicator

Summary of Issues and SEA Recommendations

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.
- 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.

SEA Recommendations

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

Landscape

Landscape and townscape changes will result from climate change impacts on:

- soils and vegetation
- 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 flooding, erosion and slope instability. Semi-natural habitats are likely to change as species' favoured conditions move north. This could affect native woodlands and aquatic habitats. 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.

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.

For the decarbonising zone, an environmental profile was prepared to inform the assessment and identify if required, mitigation measures.

Environmental sensitivity mapping was also used as a means to assess inter relationships across environmental topics. In addition to other baseline mapping was applied during the SEA process.

Base Map Esri. ESM mapping https://airomaps.geohive.ie/ 10 15 km 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 **ENVIRONMENTAL COUNTY GALWAY** SENSITIVITY MAP Climate Change Action Plan

Figure 1-2 Galway County Environmental Sensitivity Map

The Environmental Report set out Strategic Environmental Objectives (SEO) (Table 1.1). These were identified based on a current understanding of the key environmental issues, climate change action and related to the SEA ER of the Galway County Development Plan 2022 -2028 SEA ER. The CAP actions were evaluated against these SEOs. A matrix was used to rate the impact of the policies and objectives, as having potential positive, indirectly positive, neutral, uncertain, negative, or indirectly negative impacts.

Table 1-3 Strategic Environmental Objectives⁶

CARO Rialtas na hÉireann Government of Ireland

Strategic En	vironmental Objectives in the Galway County Development Plan 2022-2028
Climate Change	 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)	 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.

⁶ SEOs from the SEA ER of the Galway City Development Plan, and SEA ERs of other concurrent CAPS in preparation; some SEOs were modified following scoping submissions.

2024 -2029

Strategic En	vironmental Objectives in the Galway County Development Plan 2022-2028
	 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)	 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'.⁷ To protect, maintain and conserve the County's natural capita
Soil and Geology (SG)	 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
Water (W)	 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)	 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	Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County

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

Strategic En	vironmental Objectives in the Galway County Development Plan 2022-2028
	 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)	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). • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage
Landscape	 To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention

The assessment process highlighted actions with positive environmental effects at strategic scale and also recommended a number of amendments to or new actions to further strengthen the environmental performance of the CAP. Where potential uncertain or negative affects arose, they would be balanced by mitigation and monitoring measures including mitigation measures identified through the SEA, AA assessment processes as well as mitigation measures as appropriate from the County Development Plan 2022 -2028, as the key statutory landuse framework for the city.

Mitigation measures incorporated into the Galway County CAP are set out in Chapter 9 of the Environmental Report. They are integrated to the final plan as shown below in Table 1.3.

Table 1-4 SEA and AA Mitigation measures and their inclusion in the Final Galway County CAP 2024 -2029.

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

1.3 Draft CAP 2024 -2029 Stage

The draft CAP 2024 -2029, along with the Environmental Report and Natura Impact Statement (NIS) were put on public display and issued to the statutory environmental authorities for a six week period. The Draft Climate Action Plan public consultation process involved several key elements as outlined below.

The public consultation process involved the following key elements:

- a) Public notices were published in the Tuam Herald (8th and 22nd of November 2023) and the Connacht Tribune (10th and 24th November 2023) notifying members of the public that a draft Climate Action Plan and associated Environmental Reports would be on public display at the locations listed below from the 10th of November 2023.
 - Online at https://consult.galway.ie/
 - Galway Public Libraries An Cheathrú Rua, Athenry, Ballinasloe, Clifden, Galway City, Loughrea, Oranmore, Portumna, Tuam
 - Galway County Council Offices, Áras an Chontae, Prospect Hill, Galway
- b) The public notice was issued to prescribed bodies, including government departments and other agencies, adjoining Local Authorities and other relevant stakeholders.

Public consultation drop-in sessions were held in:

Location	Time and Date
Ballinasloe Library	November 14 th , 17:30 – 19:00
Clifden Library	November 16 th , 16:30 – 18:00
Tuam Library	November 18 th , 14:00 – 15:30
Loughrea Library	November 22 nd 17:30 – 19:00
Claregalway Hotel (Prior to Public Participation Network PPN Plenary)	November 28 th , 18:00 – 18:30
Comhairle na nÓg, Galway Bay Hotel	November 28 th , 11:00-14:00
Launch of GFI (Western Energy Agency)	December 7 th , 14:00-16:00

The purpose of the drop-in sessions was to inform the public and interested parties of the plan making process and to discuss/identify issues arising for consideration in the preparation of the draft Plan.

- c) Social Media channels (Facebook and Twitter) were used as mechanisms in promoting awareness of the draft Plan public consultation period. A webpage and a specific Public Consultation Portal were employed to keep members of the public up to date with the process of the preparation of the draft Plan. The majority of submissions received in relation to the draft Plan were via the consultation portal. All valid submissions received via the portal were published for public viewing on the portal.
- d) The PPN was notified in relation to the consultation on the 9th of November. The PPN December 2023 newsletter included information in relation to the draft consultation.
- e) Radio interviews were held with Galway Bay FM, Kinvara Radio and Radio na Gaeltachta, and print articles were published in the Galway Daily (online) and the Tuam Herald.

A total of 25 submissions and observations relating to the Climate Action Plan and the associated Environmental Reports were received, of which 22 were valid. There were three late submissions, which were not included in this analysis.

Submissions directly commenting on the SEA ER were made by the EPA, the Department of Housing, heritage and local government and Department of Agriculture Food and The Marine and the National

Seafood Centre. The SEA ER and NIS were updated as appropriate and changes are shown in the final SEA ER.

Where arising from the above submissions, as well as other valid submissions led to proposed changes to the CAP, these were screened for likely significant environmental effects from the SEA and were also subject to screening under the EU Habitats Directive. The respective screening reports can be found in Annex B of the SEA ER and the final NIS.

1.4 Approval of the CAP

The SEA process was considered at each stage of the making of the Plan. Having considered the plan and supporting SEA ER and NIS, the Galway City CAP 2024 -2029 was approved by the Members of Galway County Council with minor modifications in the 19th February 2024 meeting.

2 Reasons for choosing the CAP as adopted, in light of other reasonable alternatives considered

The alternatives considered in preparing the draft CAP in the first instance related to the strategic approach in how to most effectively facilitate, through policy and/or actions, the implementation of the proposed CAP. The alternatives considered in this regard are set out below:

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

A 'Do Nothing' or 'Do Minimum' alternative is not a reasonable alternative in this instance as the preparation of an effective LACAP is a statutory requirement under Section 16 of the Climate Act

2.1.1 Key environmental challenges at city scale

In addition to the environmental sensitivity map presented in Chapter 4, the following key environmental issues are relevant to the CAP and alternatives under consideration:

- Flood risk;
- Energy efficiency and adaptation to climate change;
- Seeking a meaningful reduction in the growth in demand for private transport;
- Ensuring that land use and transportation planning are integrated;
- Protection of the built and cultural heritage of the area;
- Protection of the environment by minimising waste and pollution;
- Promote the involvement of the local community in decision making and encourage social inclusion.

2.1.2 Climate Hazard Impacts

The key results from the Climate Change Risk Assessment including impacts experienced to date in Galway County and future risks are summarised below in Figure 2.1

FIGURE 2-1 CLIMATE CHANGE RISK ASSESSMENT IMPACTS EXPERIENCED TO DATE AND FUTURE RISKS

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. Curraghaline). 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.

2.1.3 Preferred alternative

Following the above evaluation and assessment, the preferred strategic alternative for the approach to the CAP 2024 -2029 is 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 several SEOs.

3 Monitoring Measures

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.

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The targets and indicators are derived from the Strategic Environmental Objectives (SEOs) presented in Table 1.2. The target underpins the objective whilst the indictors 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 CAP and in turn monitoring and reporting will be pivotal in demonstrating commitment and leadership in climate action at the local level.

A key part of the CAP is the provision of key performance indicators (KPIs) and annual reporting. Therefore, the suggested monitoring table below, whilst adapted for the SEA monitoring prepared for the Galway CDP 2022-20298 should cross reference and integrate the KPIs identified for the CAP 2024 -2029.

These will be used in annual reports to inform the performance of the local government sector on climate action, as part of the local government DECA 2030 Strategy. In accordance with part 3(w) of the Local Authority Climate Action Charter, Galway County Council will report annually to the Department of the Environment, Climate and Environment on progress on climate action at local level as part of the delivery of the national climate objective.

Progress on all actions will be reported via a reporting tool developed by CARO.

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.

Please see Table 3.1 overleaf for the monitoring measures.

Table 3-1 SEA Monitoring

Environmental Component (Code)	Indicators	Targets	Sources	Remedial Actions
Biodiversity, Flora and Fauna (BFF)	Conditions of European Sites	 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 	 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 	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.

•	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	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
•	SEAs and AAs as relevant for new Council policies, plans, programmes etc.	Screen for and undertake SEA and AA as relevant for new Council policies, plans, programmes etc.	 Internal monitoring of preparation of local land use plans 	Review internal systems
•	Status of water quality in Ballinasloe's water bodies	Included under Water below	 Included under Water below 	 Included under Water below
•	Compliance of planning permissions with Plan measures providing the protection of Biodiversity, flora and fauna	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	 Internal monitoring of likely significant environmental effects of grants of permission 	 Review internal systems
Population and • Human Health	Implementation • of Plan measures	For review of progress on implementing Plan objectives to	 Internal review of progress on 	Review internal systemsConsultations with DECC

(РНН)	relating to the promotion of economic growth as provided for by Chapter 2.3 "Economic and Enterprise Development"	demonstrate successful implementation of measures relating to the promotion of economic growth as provided for by Chapter 2.3 "Economic and Enterprise Development" 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)	implementing Plan objectives • Consultations with DECC	
	 Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Plan 	No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	 Consultations with the Health Service Executive and EPA 	Consultations with the Health Service Executive and EPA
•	 Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures	 CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	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.
	 Number of spatial plans that 	 Require all local level land use plans to include specific green 	 Internal review of local land use plans 	Review internal systems

	include specific green infrastructure mapping	infrastructure mapping		
Soil and Geology (S)	 Proportion of population growth occurring on infill and brownfield lands compares to greenfield (also relevant to Material Assets) Instances where 	 Maintain built surface cover nationally to below the EU average of 4% 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 a small and parcels. 	 EPA Geoportal Compilation of greenfield and brownfield development for the DHLGH AA/Screening for AA for each application 	Where the proportion of growth on infill and brownfield sites is not 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. Consultations with the
	contaminated material generated from brownfield and infill must be disposed of	in compliance with EPA guidance and waste management requirements	of permission where contaminated material must be disposed of	EPA and Development Management
	 Environmental assessments and AAs as relevant for applications for brownfield and infill development prior to planning permission 	 Screen for and undertake environmental assessments and AA as relevant for applications for brownfield and infill development prior to planning permission 	 Internal monitoring of grants of permission 	● Review internal systems
Water (W)	 Status of water bodies as reported by the 	 Not to cause deterioration in the status of any surface water or affect the ability of any surface 	 EPA Monitoring Programme for WFD compliance 	 Where water bodies are failing to meet at least good status this will be

	EPA Water Monitoring Programme for the WFD.	 water to achieve 'good status' Implementation of the objectives of the River Basin Management Plan 		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. A tailored response will be developed in consultation with these stakeholders in such a circumstance. • 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
Material Assets	Number of incompatible developments permitted within flood risk areas Programmed	 Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk All new developments granted 	 Internal monitoring of likely significant environmental effects of grants of permission Internal monitoring of 	consider whether it is necessary to coordinate a response with the Regional Assembly, EPA • 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. • Where planning

(MA)	delivery of Irish Water infrastructure for all key growth towns in line with Irish Water Investment Plan and prioritisation programme to ensure sustainable growth can be accommodated Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of	permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan • 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	likely significant environmental effects of grants of permission Consultations with the Irish Water • DHLGH in conjunction with Local Authorities	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 and Irish Water to achieve the necessary capacity.
	the Plan • Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures	Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures	 CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	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)	 Proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels of 74% NOx, SOx, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	 Decrease in proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels Improvement in Air Quality trends, particularly in relation to transport related emissions of NOx and particulate matter 	 CSO data Data from the National Travel Survey EPA Air Quality Monitoring Consultations with Department of Transport and Department of Environment, Climate and Communications 	Where proportion of population shows increase in private car use above CSO 2016 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
Climatic Factors (C)	 Implementation of Plan measures relating to climate reduction targets 	 For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to climate reduction targets 	 Internal monitoring of likely significant environmental effects of grants of permission 	Review internal systems
-	 A competitive, low-carbon, climate-resilient and environmentally sustainable economy 	 Contribute towards transition to a competitive, low-carbon, climate- resilient and environmentally sustainable economy by 2050 	 Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 EPA Annual National Greenhouse Gas Emissions Inventory 	 Where targets are not achieved, the Council will liaise with the Regional Assembly and the Eastern and Midlands Climate Action Regional Office to
	Share of renewable energy in transport	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	reporting Climate Action Regional Office Consultations with DECC (at monitoring evaluation)	establish reasons and develop solutions.

Carbon dioxide (CO2) emissions across the electricity generation, built environment and transport sectors	 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 		
 Energy consumption, the uptake of renewable options and solid fuels for residential heating 	 To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating 		
Proportion of journeys made by private fossil fuel-based car compared to 2016 levels	Decrease in the proportion of journeys made by residents of the Ballinasloe using private fossil fuel-based car compared to 2016 levels	 CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	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.
Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures	 Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	 CSO data Monitoring of Galway County Council's Climate Change Adaptation Strategy 2019-2024 	 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)	• Percentage of entries to the Record of Monuments and Places, and the context these entries within the surrounding landscape where relevant, protected from adverse effects resulting from development which is granted permission under the Plan	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 development which is granted permission under the Plan	 Internal monitoring of likely significant environmental effects of grants of permission 	Where monitoring reveals visitor pressure is causing negative effects on key tourist features along these routes, the Council will work with Regional Assembly, Fáilte Ireland and other stakeholders to address the pressures through additional mitigation tailored to the plans.
	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	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	Consultation with DHLGH	
Landscape (L)	 Number of developments 	 No developments permitted which result in avoidable adverse 	 Internal monitoring of likely significant 	 Where monitoring reveals developments

permitted that	visual impacts on the landscape,	environmental effects of	permitted which result in
result in	especially with regard to	grants of permission	avoidable adverse visual
avoidable	landscape and amenity		impacts on the
adverse visual	designations included in Land Use		landscape, the Council
impacts on the	Plans, resulting from		will reexamine Plan
landscape,	development which is granted		provisions and the
especially with	permission under the Plan		effectiveness of their
regard to			implementation
landscape and			
amenity			
designations			
included in Land			
Use Plans,			
resulting from			
development			
which is granted			
permission			
under the Plan.			