

SEA ENVIRONMENTAL REPORT

APPENDIX II – NON-TECHNICAL SUMMARY

FOR THE

DRAFT CARLOW-GRAIGUECULLEN JOINT URBAN LOCAL AREA PLAN 2024-2030

for: Carlow and Laois County Councils



by: CAAS Ltd.



DECEMBER 2023

Table of Contents

Section 1	Introduction and Terms of Reference	1
Section 2	The Draft Plan.....	3
2.1	Introduction and Content.....	3
2.2	Form and Content of the Plan	3
2.3	Vision and Strategic Objectives	4
2.4	Strategic work undertaken by the Councils to ensure contribution towards environmental protection and sustainable development.....	4
2.5	Relationship with other relevant Plans and Programmes	5
Section 3	The Environmental Baseline.....	6
3.1	Introduction	6
3.2	Likely Evolution of the Environment in the Absence of the Draft Plan.....	6
3.3	Biodiversity and Flora and Fauna	6
3.4	Population and Human Health.....	7
3.5	Soil.....	8
3.6	Water	8
3.7	Air and Climatic Factors	13
3.8	Material Assets	14
3.9	Cultural Heritage.....	15
3.10	Landscape.....	16
3.11	Strategic Environmental Objectives.....	18
Section 4	Alternatives	19
4.1	Introduction	19
4.2	Limitations in Available Alternatives	19
4.3	Alternatives Already Considered	19
4.4	Compact Development Alternatives	19
4.5	Ecosystem Services Approach Alternatives	21
4.6	Area Based Transport Assessment Alternatives	22
4.7	Built Heritage Alternatives.....	23
4.8	Reasons for Choosing the Selected Alternative in light of Other Reasonable Alternatives Considered	23
Section 5	Summary of Effects arising from Plan.....	24
Section 6	Mitigation and Monitoring Measures	29
6.1	Mitigation.....	29
6.2	Monitoring.....	29

Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report for the Carlow-Graiguecullen Joint Urban Draft Local Area Plan (JULAP) 2024-2030. The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan. The Environmental Report has been prepared as part of a Strategic Environmental Assessment (SEA) process for the Plan.

What is SEA?

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic, social and other considerations.

Why is SEA needed? The Benefits

SEA is the Councils' and the public's guide to what are generally the best areas for development in the town.

SEA enables the Councils to direct development towards robust, well-serviced and connected areas in the town – thereby facilitating the general avoidance of incompatible development in the most sensitive, least well-serviced and least well-connected areas, in the town and beyond.

SEA provides greater certainty to the public and to developers. Plans are more likely to be adopted without delays or challenges and planning applications are more likely to be granted permission. Environmental mitigation is more likely to cost less.

The Plan directs incompatible development away from the most sensitive areas in the town and focuses on directing compact, sustainable development within the existing envelope of the Plan area. Development of these generally more robust, well-serviced and well-connected areas of the town will contribute towards environmental protection and sustainable development, including climate mitigation and adaptation.

Compact development can be accompanied by placemaking initiatives to enable the town to become a more desirable place to live – so that it maintains populations and services.

Compatible sustainable development in the town's sensitive areas is also provided for, subject to various requirements relating to environmental protection and management being met.

How does the SEA work?

All of the main environmental issues in the area were assembled and considered by the team who prepared the Plan. This helped them to devise a Plan that contributes towards the protection and management of environmental sensitivities. It also helped to identify wherever potential conflicts between the Plan and the environment exist and enabled these conflicts to be mitigated.

The SEA was scoped in consultation with designated environmental authorities.

What is included in the Environmental Report that accompanies the Plan?

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Plan;
- An assessment of the provisions of the Plan; and,
- Mitigation measures, which will avoid/reduce the environmental effects of implementing the Plan and will contribute towards compliance with important environmental protection legislation.

Difficulties Encountered during the SEA process

No significant difficulties have been encountered during the undertaking of the assessment to date.

What happens at the end of the process?

An SEA Statement is prepared which summarises, inter alia, how environmental considerations have been integrated into the Plan.

Section 2 The Draft Plan

2.1 Introduction and Content

A mandatory Local Area Plan is required for Carlow Town having regard to Section 19 of the Planning and Development Act 2000 (as amended), which states that a Local Area Plan is required to be prepared in respect of an area that is:

- Designated as a town in the most recent census;
- Has a population in excess of 5,000; and,
- Is situated in the functional area of the planning authority which is the county council.

Carlow-Graiguecullen is a designated Key Town with a recorded population in excess of 27,000 in 2022. In accordance with Section 18(2) of the Act, Carlow County Council and Laois County Council are collaborating in the preparation of the Joint Urban Draft Local Area Plan (JULAP).

The Draft JULAP addresses spatial planning in the Carlow-Graiguecullen area and identifies the various social, economic, and environmental issues of relevance. Policies, objectives, and related provisions are outlined to guide future development in accordance with the proper planning and sustainable development of the area.

2.2 Form and Content of the Plan

The Draft Plan comprises a written statement and combined land use zoning map encompassing Carlow Town, Carlow Town Environs, and Graiguecullen. The land use zonings for Carlow Town (i.e., former Carlow Town Council area), were adopted in May 2022 as part of the preparation of the Carlow County Development Plan 2022-2028 and have been reflected in the Draft Plan.

The written statement and supporting maps comprise the primary policy document for the Draft JULAP and is set out over 12 Chapters as follows:

- Chapter 1 - Plan Review and Context
- Chapter 2 - Carlow-Graiguecullen Strategic Planning and Vision
- Chapter 3 - Core Strategy and Housing
- Chapter 4 - Economic Development, Retail and Tourism
- Chapter 5 - Urban Design, Town Centre and Regeneration
- Chapter 6 - Sustainable Travel and Transportation
- Chapter 7 - Infrastructure and Environmental Services
- Chapter 8 - Sustainable Communities
- Chapter 9 - Built Heritage
- Chapter 10 - Natural Heritage and Amenity
- Chapter 11 - Climate Action
- Chapter 12 - Land Use Zoning Objectives and Implementation

The Draft JULAP includes appendices and associated environmental reports i.e., this SEA Environmental Report, an Appropriate Assessment Natura Impact Report, and a Strategic Flood Risk Assessment. An Area Based Transport Assessment has also been prepared for the Urban Area. These documents complement and contribute to the evidence-led approach to the formulation of the written statement and supporting maps. In the event of any conflict or ambiguity between what is contained within the Written Statement and the supporting maps, the Written Statement shall take precedence. In the full interpretation of all policies and objectives for Carlow-Graiguecullen, it is essential that both the Carlow and Laois County Development Plans, as overarching policy documents, are read in tandem with the Draft Plan. Where conflicting policies and objectives arise between these County Development Plans and the JULAP, the policies and objectives of the County Development Plans, as they apply to lands in the functional area of County Carlow or County Laois, shall take precedence.

2.3 Vision and Strategic Objectives

The Vision for the Plan is: “To ensure that Carlow-Graiguecullen maximises and builds on its Key Town designation, strategic accessible location, regional and inter-regional connectivity, and existing inherent strengths, prioritising quality of life considerations, the economic and employment potential of the town, town centre led urban regeneration, focusing on a low carbon and compact pattern of development, while seeking to conserve and enhance the town’s existing natural and built heritage assets.”

To contribute to the delivery of this vision and in order to maximise on the designation of the urban area as a Key Town a number of cross-cutting strategic objectives and priorities have been identified. These are intended to guide the future growth of the joint urban area in accordance with proper planning and sustainable development. They have been formulated to reflect and build on the town’s attributes, while also taking account of key issues and challenges into the future. The Plan’s Strategic Objectives are as follow:

- SO. 1: Encourage and support town centre led urban regeneration for Carlow-Graiguecullen, focusing on the appropriate redevelopment and reuse of key derelict, vacant and underutilised sites and buildings, the consolidation of the town through the use of brownfield, infill and backland sites, the conservation of historic building stock, and the implementation of streetscape and public realm improvements.
- SO. 2: Encourage and facilitate balanced economic development and employment opportunities in Carlow-Graiguecullen, ensuring a vibrant local economy that maximises business and investment opportunities and the existing economic attributes of the town, and supports the development of a diverse range of economic sectors.
- SO. 3: Improve the public realm and attractiveness of Carlow-Graiguecullen through the delivery of high-quality urban design outcomes, taking account of the need to respond to the social and physical characteristics of the existing built environment and those features that should be protected and/or enhanced by, and inform, new development.
- SO. 4: Prioritise integrated transport and land use, supported by investment in public transport, active travel networks and shared, low-carbon mobility options, which will improve people’s travel choices and support safe, sustainable, and healthy lifestyles.
- SO. 5: Promote Carlow-Graiguecullen as a priority location for regional level community and social infrastructure and support the expansion and enhancement of existing community facilities, the provision of residential development, and a range of new community facilities in tandem with population growth to meet the needs of future residents in the joint urban area.
- SO. 6: Transition Carlow-Graiguecullen to a low-carbon and climate resilient town through a combination of effective mitigation and adaptation measures, in addition to maximising opportunities for energy efficiency, renewables, and decarbonisation.
- SO. 7: Manage the development of Carlow-Graiguecullen in a manner that protects, conserves, and enhances the natural and built heritage of the area.
- SO. 8: Support the development of, and investment in new and existing arts, culture and tourism infrastructure and amenities in Carlow-Graiguecullen.

2.4 Strategic work undertaken by the Councils to ensure contribution towards environmental protection and sustainable development

Far in advance of the placing of the Draft Plan on public display, Carlow and Laois County Councils undertook various works in order to inform the preparation of the Plan.

Strategic work undertaken by the Councils includes background work in relation to Plan provisions, including those relating to:

- Core Strategy and Housing;
- Economic Development, Retail and Tourism;
- Urban Design, Town Centre and Regeneration;
- Sustainable Travel and Transportation;
- Infrastructure and Environmental Services;

- Sustainable Communities;
- Built Heritage;
- Natural Heritage Green Infrastructure and Landscape;
- Climate Action; and
- Use Zoning and Implementation.

The undertaking of the SEA process was part of this strategic work and contributed towards the integration of environmental considerations into individual Plan provisions.

2.5 Relationship with other relevant Plans and Programmes

It is acknowledged that many of the major issues affecting Carlow-Graigucullen's development are contingent on national policy and government funding.

The Draft Plan sits within a hierarchy of statutory documents setting out public policy for, among other things, land use planning, infrastructure, sustainable development, tourism, environmental protection and environmental management. The Plan must comply with relevant higher-level strategic actions and will, in turn, guide lower-level strategic actions. These documents include plans and programmes such as those referred to throughout this summary. These documents have been subject to their own environmental assessment processes, as relevant.

The National Planning Framework sets out Ireland's planning policy direction for the years 2018-2040. The National Planning Framework is to be implemented through Regional Spatial and Economic Strategies and lower tier Development Plans and Local Area Plans. The Regional Spatial and Economic Strategy for the Eastern and Midland Region and the Southern Region set out objectives for land use planning, tourism, infrastructure, sustainable development, environmental protection and environmental management that have been subject to environmental assessment and must, as relevant and appropriate¹, be implemented through the Carlow and Laois County Development Plans, that set out the overarching development strategy for the counties, and the Local Area Plan.

In order to be realised, projects included in the Local Area Plan (in a similar way to other projects from any other sector) will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework.

¹ Carlow-Graigucullen includes the functional area of two local authorities and two regional assemblies. The area of the town around Graigucullen in County Laois is in the functional area of the Eastern and Midland Region, while the greater area of Carlow Town within County Carlow is located with the Southern Region.

Section 3 The Environmental Baseline

3.1 Introduction

The summary of the environmental baseline of the Plan area is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified in Section 3.11, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Draft Plan and in order to determine appropriate monitoring measures.

3.2 Likely Evolution of the Environment in the Absence of the Draft Plan

In the absence of a new Local Area Plan, the framework for development across the Plan area would be provided by the County Development Plans and other related documents. There would be no Local Area Plan to provide additional detail beyond that provided already through the existing planning framework as how to achieve sustainable development and environmental protection and management in the town.

As a result, there would be both:

- A decreased likelihood in the extent, magnitude and frequency of the positive environmental effects identified by this assessment occurring; and;
- An increased likelihood in the extent, magnitude and frequency of the adverse environmental effects identified by this assessment occurring.

3.3 Biodiversity and Flora and Fauna

Key ecological sensitivities within and surrounding the Plan area include:

- **River Barrow and River Nore Special Area of Conservation** intersecting the Plan area - which has been designated for:
 - Alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the EU Habitats Directive;
 - Old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the EU Habitats Directive; and
 - Various species listed on Annex II of the EU Habitats Directive including sea lamprey, river lamprey, brook lamprey, freshwater pearl mussel, Nore freshwater pearl mussel, crayfish, twaite shad, Atlantic salmon, otter, Desmoulins's whorl snail and the Killarney fern.
- **Oakpark proposed Natural Heritage Area**, partially within and adjacent to the northern fringe of the Plan area; this site and comprises mature woodland, lakes and wetlands that provide an important habitat for wildlife, including many wild and game birds;
- **Cloghrick Wood proposed Natural Heritage Area** located c. 3 km south-west downstream of the Plan area and its associated terrestrial and aquatic ecology;
- Significant natural heritage spaces and corridors, including: aquatic and riverine ecology associated with the **River Barrow** and the **River Burren**, their tributaries and riparian buffer zones intersecting the Plan area; and the **Oak Park Forest Park** and **Carlow Town Park**.

Designated sites in the wider area include Special Areas of Conservation² (SACs) and Special Protection Areas³ (SPAs). These are mapped on Figure 3.1. There are no SPAs designated within the Plan area or 15 km of the Plan boundary. There is one SAC designated partially within the Plan area, the River Barrow and River Nore SAC, and two other SACs designated within 15 km of the Plan boundary, the Slaney River Valley SAC and Holdenstown Bog SAC.

² 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) due to their conservation value for habitats and species of importance in the European Union. The Habitats Directive seeks to establish Natura 2000, a network of protected areas throughout the EU. It is the responsibility of each member state to designate SACs to protect habitats and species, which, together with the SPAs designated under the 1979 Birds Directive, form Natura 2000. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010. The Regulations have been prepared to address several judgments of the Court of Justice of the European Union (CJEU) against Ireland, notably cases C-418/04 and C-183/05, in respect of failure to transpose elements of the Birds Directive and the Habitats Directive into Irish law.

³ SPAs have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) - referred to as the Birds Directive - due to their conservation value for birds of importance in the EU.

The CORINE 2018⁴ mapping (as shown on Figure 3.2) identifies the land cover within central parts of the Plan area as urban fabric with the adjacent industrial or commercial units and mineral extraction sites. The surrounding hinterland consists mainly of pastures, non-irrigated arable land and complex cultivation patterns. There is also areas of sport and leisure facilities, water bodies and mixed forest to the north of the Plan area and road and rail networks and associated land to the south-east of the Plan area.

Existing Problems

Ireland's Article 17 report on the Status of EU Protected Habitats and Species in Ireland (DCHG, 2019) identifies various Irish, EU-protected habitats and species to be of unfavourable status and many to be still declining, although it also identifies that a range of positive actions are underway. Ireland's Article 12 Birds Directive Reports and the 6th National Report under the Convention of Biological Diversity identify similar issues.

The Plan includes measures to contribute towards the protection of biodiversity and flora and fauna and associated ecosystem services.

Previous changes in land uses arising from human development have resulted in a loss of biodiversity and flora and fauna; however, legislative objectives governing biodiversity and fauna were not identified as being conflicted with. The Plan includes measures to contribute towards the protection of biodiversity and flora and fauna and associated ecosystem services.

3.4 Population and Human Health

The preliminary results of Census 2022 within the CSO settlement boundary of Carlow-Graiguecullen recorded a population of 27,351 persons. The Carlow County Development Plan 2022-2028 provides a projected population increase for Carlow Town (including Carlow Environs) of 3,107 people by 2028, while the Laois County Development Plan 2021-2027 identifies a projected population for Graiguecullen of 700 people by 2027.⁵

Carlow-Graiguecullen has been designated as a Key Town in the Regional Spatial and Economic Strategies, a designation defined in both County Development Plans in terms of the town's:

- Self-sustaining economic regional driver role
- Sub-regional influence
- Large population scale
- Large economically active service and/or county town
- Employment provision
- High-quality transport links
- Capacity to act as a growth driver.

The population provided for in the Plan will interact with various environmental components. Potential interactions include:

- Recreational and development pressure on habitats and landscapes;
- Contribution towards increase in demand for waste water treatment at the municipal level;
- Contribution towards increase in demand for water supply and associated potential impact of water abstraction;
- Potential interactions in flood-sensitive areas; and
- Potential effects on water quality

Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings). Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example. These factors have been considered with regard to the description of: the baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

⁴ The CORINE (Co-ordinated Information on the Environment) land cover data series was devised as a means of compiling geo-spatial environmental information in a standardised and comparable manner.

⁵ Draft Carlow-Graiguecullen Joint Urban Local Area Plan 2024-2030

Existing Problems

The number of homes within the Plan area with radon levels above the reference level is within the normal range experienced in other locations across the country.

Parts of the Plan area are vulnerable to adverse effects from changes in the occurrence of severe rainfall events and associated flooding from surface water. Flooding in certain circumstances could pose a risk to human health. There is historic and predictive evidence of flooding within the Plan area.

3.5 Soil

Main soil types surrounding the built-up areas⁶ of Carlow-Graigucullen are: alluvial soils (associated with alluvial clay, silt or sand river deposits of the Rivers Barrow and River Burren) stretching along the south-west, south-east and north-west of the Plan area; surface water gleys (wetland soils with slowly permeable horizons resulting in seasonal waterlogging) occurring adjacent to the western parts of the Plan area; luvisols (generally fertile, widely used for agriculture and associated with significant accumulation of clay) partially within the Plan area and the surrounding hinterland; and peat soils. Peat soils are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues.

Geological Survey Ireland coordinate the Irish Geological Heritage Programme, whereby an objective has been set to identify and select sites of geological interest within each county across the country. County Geological Sites (CGSs) do not receive statutory protection like Natural Heritage Areas but receive an effective protection from their inclusion in the planning system. The audits of CGSs in County Carlow and in County Laois were completed in 2004 and 2016 respectively, identifying six CGSs in County Carlow and 33 in County Laois. There are no designated County Geological Sites occurring within the Plan area. The closest CGS is located c. 4 km to the north-west of the Plan area, Hollymount CGS (Site Code: LS015) in County Laois.

The GSI have identified⁷ the Plan area as having mainly low levels of landslide susceptibility with some moderately low landslide susceptibility in the eastern parts of the Plan area.

3.6 Water

Surface water within and surrounding the Plan area is channelled by rivers and streams and their tributaries forming part of the Barrow River Catchment. The River Burren (which rises on the northern slopes of Mount Leinster) flows from east to west through the central parts of the Plan area and joins the River Barrow to the south of Bridge Street in the west of the Plan area.

The current WFD (2016-2021) status⁸ of different stretches of the surface waters draining the Plan area is either *good* or *moderate*. Figure 3.3 illustrates the WFD surface water status within and surrounding the Plan area. The River Burren and River Barrow are currently identified in the combined 2016-2021 data as being at risk of not meeting the WFD objectives by 2027 due to the damage being caused by significant pressures⁹ related to: hydromorphological and anthropogenic pressures; agricultural pressures; and urban run-off pressures.

The WFD status (2016-2021) of groundwater underlying the Plan area (also illustrated on Figure 3.3) is currently identified as being of *poor* status (not meeting the objectives of the WFD) throughout the centre of the Plan area and *good status* (meeting the objectives of the WFD) in the eastern parts of Carlow Town and around Graigucullen in the west.

A Strategic Flood Risk Assessment (SFRA) document accompanies this SEA Environmental Report and the Draft Plan. Requirements in relation to SFRA are provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of Environment and Office of Public Works,

⁶ The built-up areas are mainly made up of urban soils. Urban soils are soils, which have been disturbed, transported or manipulated by human activity in the urban environment and are often overlain by a non-agricultural, man-made surface layer that has been produced by mixing, filling or by contamination of land surfaces in urban and suburban areas.

⁷ <https://www.gsi.ie/en-ie/programmes-and-projects/geohazards/projects/Pages/Landslide-Susceptibility-Mapping.aspx>

⁸ As per EPA's WFD Status 2016-2021 classification (<https://gis.epa.ie/EPAMaps/>).

⁹ <https://gis.epa.ie/EPAMaps/Water>

2009) and associated Department of the Environment, Community and Local Government Circular PL2/2014.

Flood risk management and drainage provisions are already in force through the Carlow and Laois County Development Plans and related provisions have been integrated into the Draft Plan. In addition, land use zoning within the Plan area has been informed by the SFRA process and associated delineation of flood risk zones.

Historical flooding is documented by the Office of Public Works. The most significant source of flood risk within the Plan area is from fluvial (from rivers and streams), however there are other sources of flooding present including pluvial (from rainwater) and risk from surface drainage systems.

Predictive flood risk mapping is also available from the Office of Public Works and is included in the SFRA document that accompanies the Plan.

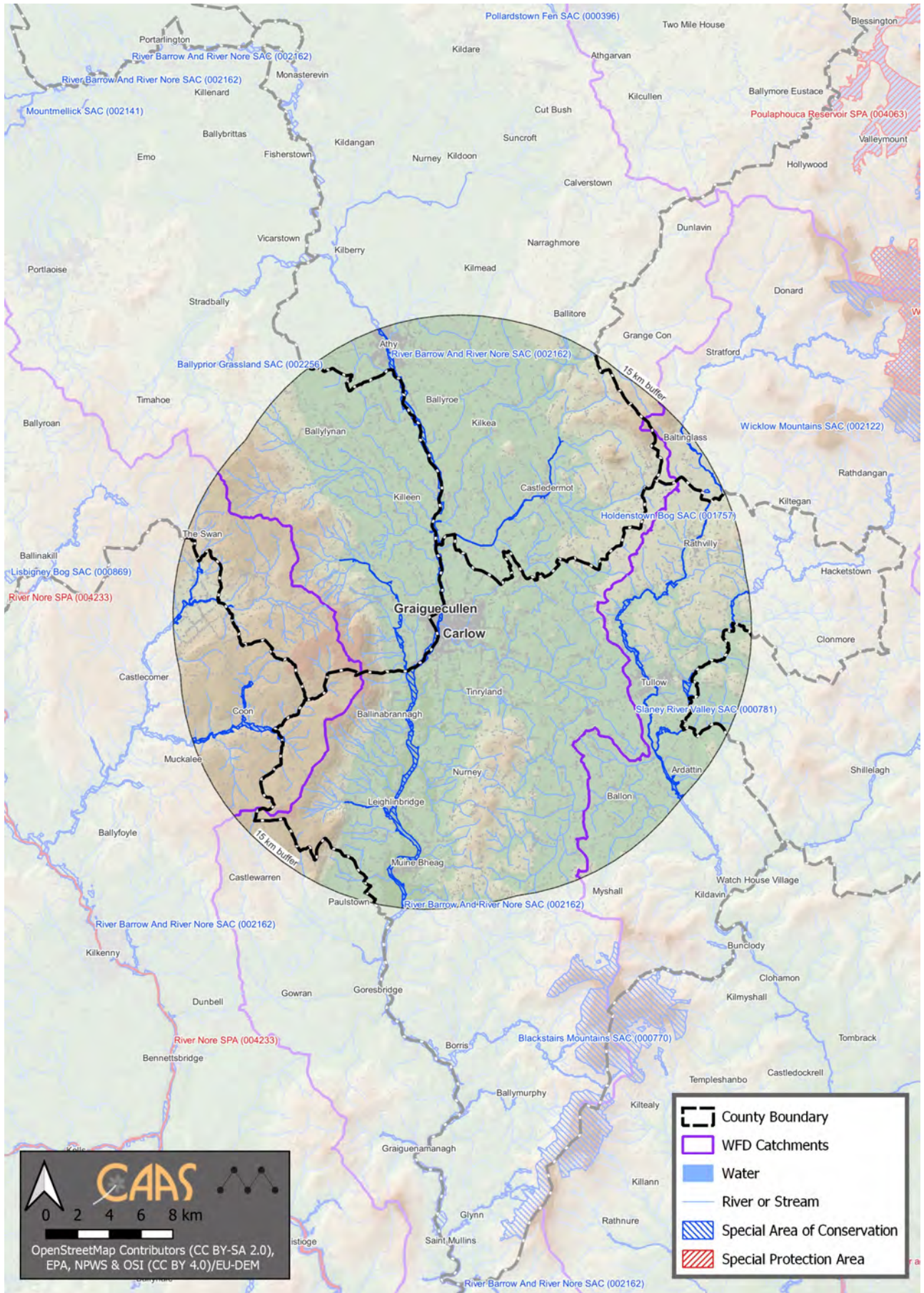


Figure 3.1 European Sites within and within 15 km buffer of the Plan area

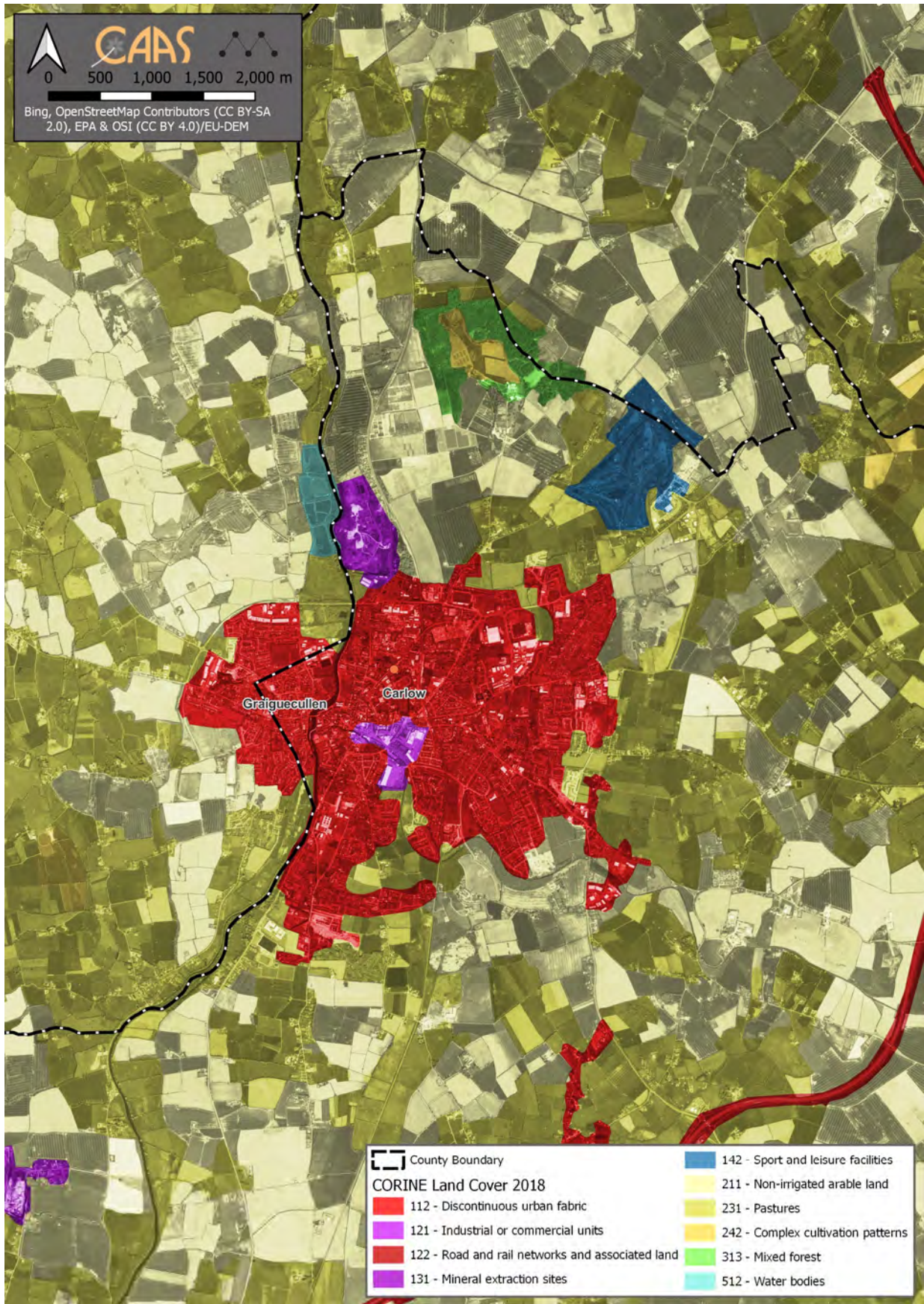


Figure 3.2 CORINE Land Cover Mapping 2018

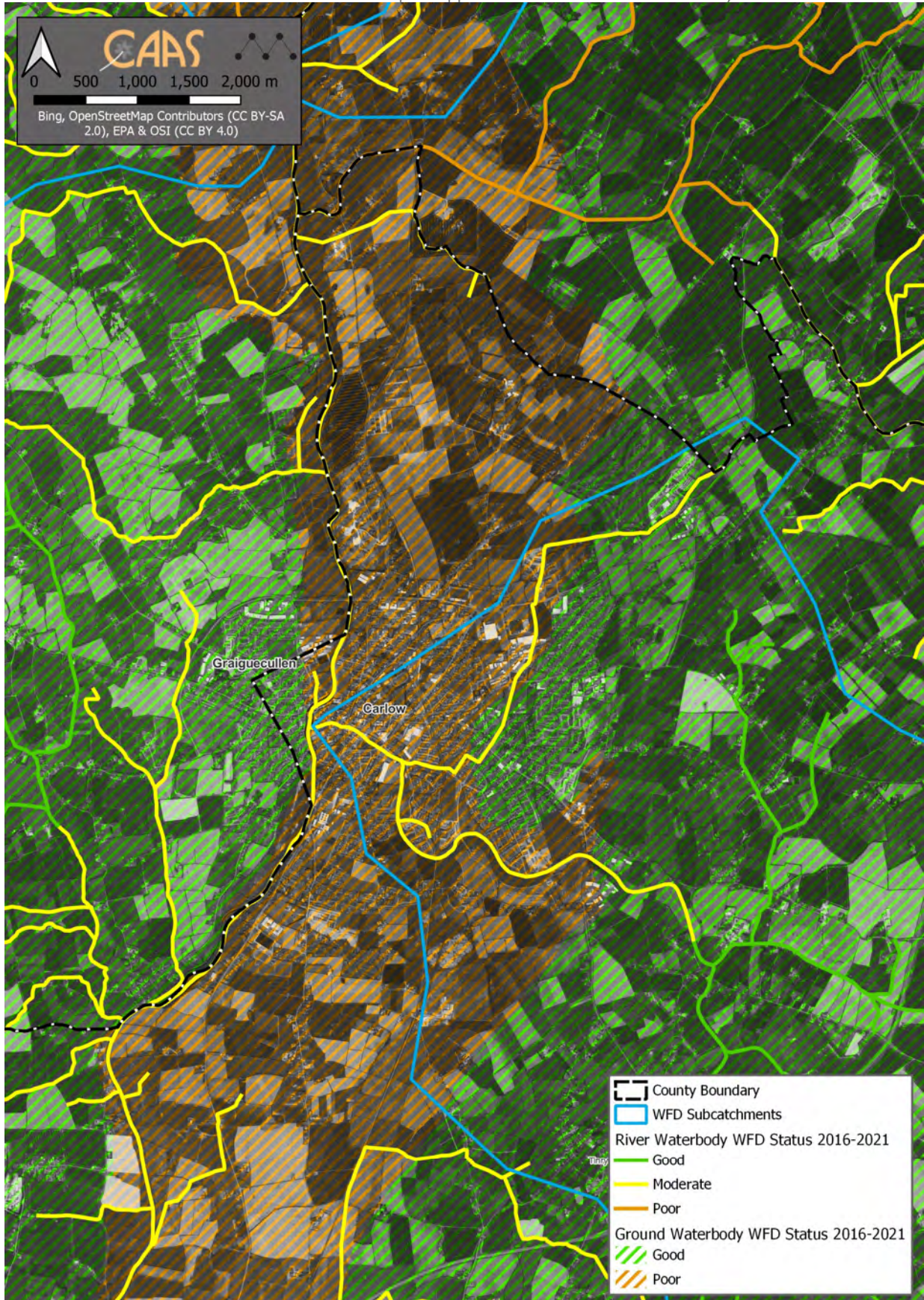


Figure 3.3 Surface Water Status (2016-2021)

3.7 Air and Climatic Factors

Climate mitigation describes the action to reduce the likelihood of climate change occurring or reduce the impact if it does occur. This can include reducing the causes of climate change (e.g. emissions of greenhouse gases) as well as reducing future risks associated with climate change.

The National Climate Action Plan 2023 (the second annual update to Ireland's Climate Action 2019) provides a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and setting Ireland on a path to reach net-zero emissions by no later than 2050, as committed to in the Programme for Government and set out in the Climate Act 2021. The Plan lists the actions needed to deliver on climate targets and sets indicative ranges of emissions reductions for each sector of the economy. It will be updated periodically, to ensure alignment with legally binding economy-wide carbon budgets and sectoral ceilings.

Climate adaptation is a change in natural or human systems in response to the impacts of climate change. These changes moderate harm or exploit beneficial opportunities and can be in response to actual or expected impacts.

The National Adaptation Framework Department of Communications, Climate Action and Environment, 2018), sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation. Under the Framework, a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for.

The Carlow County Council Climate Change Adaptation Strategy 2019-2024 and Laois County Council Climate Change Adaptation Strategy 2019-2024 feature a range of actions across sectors including: agriculture, forestry, biodiversity, built and archaeological heritage, transport infrastructure, electricity and gas networks, communication networks, flood risk management, water quality, water services infrastructure and health. The Strategies seek to:

- Ensure a proper comprehension of the key risks and vulnerabilities of climate change;
- Bring forward the implementation of climate resilient actions in a planned and proactive manner; and
- Ensure that climate adaptation considerations are mainstreamed into all plans and policies and integrated into all operations and functions of Carlow and Laois County Councils.

The EPA's (2023) *Air Quality in Ireland 2022 Report* identifies that:

- Air quality in Ireland is generally good, however, there are concerning localised issues.
- Ireland met all of its EU legal requirements in 2022 but it did not meet the more stringent health-based World Health Organisation (WHO) Air Quality guidelines.
- Fine particulate matter (PM_{2.5}) from solid fuel combustion and nitrogen dioxide (NO₂) from vehicle emissions are the main pollutants.
- It is estimated that there are approximately 1,300 premature deaths annually in Ireland due to poor air quality from PM_{2.5}.
- The choices people make in how they heat their homes and how they travel directly impact the quality of the air they breathe.
- Ireland's ambition in the Clean Air Strategy is to move towards the WHO Air Quality guidelines.

The report further identifies the critical role of local authorities in the enforcement and implementation of existing plans and investment in infrastructure to encourage cleaner and healthier air quality choices, including:

- Local authorities must provide more resources to increase air enforcement activities and implement the new solid fuel regulations.
- Investment in clean public transport infrastructure across the country must be maintained and increased.
- More safe footpaths and cycle lanes must be created to continue to increase active travel as a viable and safe alternative to car use and associated NO₂ emissions.

3.8 Material Assets

Other material assets, in addition to those referred to below, covered by the SEA include archaeological and architectural heritage (see Section 3.9) natural resources of economic value, such as water and air (see Sections 3.6 and 1.1).

Public Assets and Infrastructure

Public assets and infrastructure that have the potential to be impacted upon by the Plan, if unmitigated, include: resources such as public open spaces, parks and recreational areas; public buildings and services; transport and utility infrastructure (electricity, telecommunications, water supply, waste water infrastructure etc.); and natural resources that are covered under other topics such as water and soil.

Waste Water

The Plan area is served by the Carlow (Mortarstown) Wastewater Treatment Plant (Registration No. D0028-01) and has a design capacity of 36,000 Population Equivalent (PE) with a current (2022) load of 32,036 PE and spare capacity of 3,964 PE.¹⁰ As indicated by Uisce Éireann there is currently spare capacity available at this plant, with a project/planned underway.¹¹ While Irish Water confirm through their current capacity registers that the WWTP has spare capacity, improvement and upgrade works are planned to bring capacity up to 58,000 PE¹².

Water Supply

The Plan area is within the Carlow North Water Resource Zone¹³ and as identified by Uisce Éireann, there is capacity available to meet 2032 population targets, although an improvement to the level of service is required.¹⁴

Waste Management

Waste management within the Plan area is guided by the Southern Waste Management Plan 2015-2021 (for Carlow Town) and the Eastern-Midlands Waste Management Plan 2015-2021 (for Graiguecullen). The Plans provides frameworks for the prevention and management of waste in a sustainable manner.

There are three Region Waste Management Plans in Ireland and these will be replaced by a new National Waste Management Plan for a Circular Economy, which will take account of the various measures outlined in A Waste Action Plan for A Circular Economy - Ireland's National Waste Policy 2020-2025.

Transport

Carlow-Graiguecullen is an accessible urban centre, with good access and transport infrastructure that includes road network connectivity to Dublin and Waterford via the M9, and to the Midlands and South-East via the N80. These main road routes are supplemented by a network of regional roads further linking Carlow-Graiguecullen to surrounding towns, villages, and rural areas in both counties. Together with this road infrastructure, the urban area is situated on the Dublin-Waterford railway line, with Carlow Railway Station located proximate to the town centre. Services from Carlow are infrequent, with an hourly frequency at peak times and gaps of up to three hours between services during the day. Improvements to frequency and timetabling would improve rail connectivity for Carlow-Graiguecullen with the wider eastern, midlands and southern regions.

In terms of bus transport, JJ Kavanagh operates on the Dublin-Waterford route, with 13 daily services from SETU Carlow and Carlow Coach Park to Dublin Airport. Bus Éireann – Expressway routes 4 and 4X link Carlow-Graiguecullen with Dublin Airport as well. Other services to regional destinations such as Wexford, Portlaoise, Tullamore, Athlone, and Naas, are less frequent. Local Link runs a number of demand-responsive services that connect the urban area with towns and villages in its hinterland. More recently

¹⁰ https://www.water.ie/docs/aers/2022/D0028-01_2022_AER.pdf

¹¹ <https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/carlow/> (Published in June 2023)

¹² Draft Carlow-Graiguecullen Joint Urban Area Plan 2024-2030

¹³ A Water Resource Zone (WRZ) is an independent water supply system serving a region, city, town or village and is governed by topography or the extent of the water distribution network in an area. A WRZ may include multiple Water Treatment Plants and/or sources.

¹⁴ Capacity constraints exist, connection applications will be assessed on an individual basis considering their specific demand requirements. An improvement to the Level of service will be required to meet 2031 population targets. This may take the form of leakage reduction and/or capital investment to maintain/improve levels of service as the demand increases. Proposed solutions will be developed & prioritised through the National Water Resources Plan and investment planning process. Source: <https://www.water.ie/connections/developer-services/capacity-registers/water-supply-capacity-register/carlow/> (Published in June 2023).

and following a lengthy period of consultation between Carlow County Council and the NTA, a local bus service in Carlow Town became operative in August 2023.¹⁵

Existing Problems

The provisions of the Plan will contribute towards protection of the environment with regard to impacts arising from material assets.

The provisions of infrastructure and supporting services for development, particularly water and wastewater services, is critical. Current challenges include those identified above.

3.9 Cultural Heritage

Archaeological Heritage

The Record of Monuments and Places (RMP) is an inventory, put on a statutory basis by amendment to the National Monuments Act 1994, of sites and areas of archaeological significance, numbered and mapped. It is available from the National Monuments Service and at archaeology.ie.

There are various Zones of Notification designated within Carlow-Graiguecullen, with entries to the Sites and Monuments Record and Record of Monuments and Places identified. There are various recorded monuments within the Plan area, including clusters within the town's Zone of Archaeological Potential. Entries to the RMP include: historic town; town defences; Chapelstown ecclesiastical site; Kernanstown megalithic tomb; burial grounds; mills; field systems; ring-ditches; bridges; churches; tombs; cremation pits; religious buildings; enclosures; armorial plaque; dovecote; designed landscape; battlefield; and Anglo-Norman masonry castle (also identified as a National Monument in State Care Guardianship).¹⁶

Architectural Heritage

Protected structures are defined in the Planning and Development Act 2000 as amended as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

Clusters of architectural heritage are indicated within the town's centre. There are various Protected Structures within Carlow-Graiguecullen Plan area¹⁷, including some well-known and landmark examples, such as:

- Carlow Cathedral (RPS CT77);
- Carlow College St. Patricks (RPS CT73);
- St. Mary's Church of Ireland Church (RPS CT49);
- Carlow Court House (RPS CT37);
- St. Dymphna's Hospital (RPS CT25);
- Carlow Railway Station (RPS CT8);
- Oak Park Arch/Entrance Gates (RPS CT70);
- Graiguecullen Church of Ireland Church (RPS CT118); and
- Former Sugar Factory Lime Kiln Tower (CW77).

An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or contributes to the appreciation of a Protected Structure. An ACA may or may not include Protected Structures. In an ACA, protection is placed on the external appearance of such areas or structures. There are seven Architectural Conservation Areas identified within the Plan area: Montgomery Street ACA; Dublin Street ACA; Granby Row ACA; Little Barrack Street ACA; Brown Street ACA; Maryborough Street ACA; and College Street ACA.

Existing Problems

The context of archaeological and architectural heritage has changed over time however no existing conflicts with legislative objectives governing archaeological and architectural heritage have been identified.

¹⁵ Draft Carlow-Graiguecullen Joint Urban Area Plan 2024-2030

¹⁶ Draft Carlow-Graiguecullen Joint Urban Area Plan 2024-2030

¹⁷ Draft Carlow-Graiguecullen Joint Urban Area Plan 2024-2030

3.10 Landscape

Carlow-Graiguecullen is located on mainly flat, open land. The River Barrow separates the historic core of Carlow town from Graiguecullen on the western side of the river, which flows from the north to the south of the Plan area. The River Burren also traverses the Plan area, flowing from east to west in the south of the Plan area. The land surrounding the Plan area is mainly agricultural with an area of woodland to the north of the Plan area.

A number of distinct Landscape Character Types (LCTs) have been identified within Carlow-Graiguecullen, with regard to the Department of the Environment 'Draft Landscape and Landscape Assessment Guidelines for Planning Authorities' (2000). There is a total of 6 no. LCTs in the joint urban area as set out below and mapped on Figure 3.4, each of which are accompanied by general recommendations, which are intended to inform the policy framework of the Plan as well as the development management assessment and decision-making process:

1. Historic Urban Core
2. Urban Fringe Areas
3. River Corridors
4. Lowland Agricultural Areas
5. Rolling Lands with Strong Rural Boundaries
6. Demesne Landscape

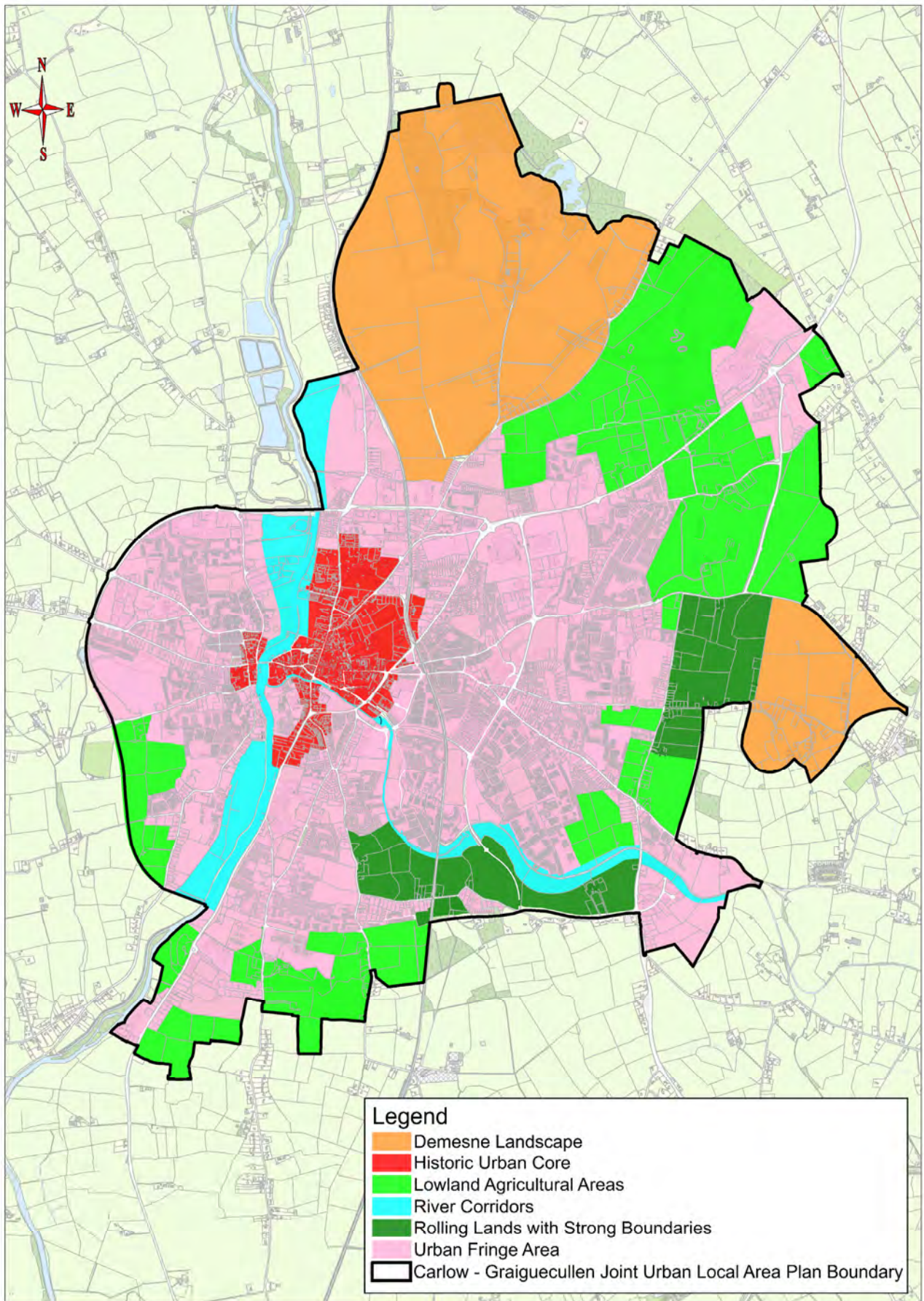


Figure 3.4 Landscape Character Types
(source: Draft Carlow-Graiguecullen Joint Urban Local Area Plan 2024-2030)

3.11 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies that generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives that have been transposed into Irish law and which are required to be implemented.

The SEOs are set out under a range of topics (see Table 3.1) and are used as standards against which the provisions of the Plan and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if – in the case of adverse effects – unmitigated.

Table 3.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Strategic Environmental Objectives
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 To protect, maintain and conserve natural capital
Population and Human Health	PHH	<ul style="list-style-type: none"> 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 Safeguard citizens from environment-related pressures and risks to health and well-being
Soil (and Land)	S	<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 Safeguard areas of prime agricultural land and designated geological sites
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 zoning and development in areas at risk of flooding and areas that are vulnerable to current and future erosion Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposals
Material Assets	MA	<ul style="list-style-type: none"> Optimise existing infrastructure and provide new infrastructure to match population distribution proposals - this includes transport infrastructure 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 Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes Encourage the transition to a zero-carbon economy by facilitating the development of a grid infrastructure to support renewables and international connectivity. Reduce the average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart- buildings, cities and grids.
Air	A	<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 – Air Quality Directive Significantly decrease noise pollution and move closer to WHO recommended levels
Climatic Factors	C	<ul style="list-style-type: none"> To minimise emissions of greenhouse gasses Integrate sustainable design solutions into 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
Cultural Heritage	CH	Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage
Landscape	L	To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention

Section 4 Alternatives

4.1 Introduction

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment. Summaries of the alternatives for the Plan and their assessment are provided below.

4.2 Limitations in Available Alternatives

The Plan is required to be prepared by the existing, already in force, Carlow and Laois County Development Plans and the Planning and Development Act 2000 (as amended), which specifies various types of objectives that must be provided for by the Plan.

The alternatives available for the Plan are significantly limited by the provisions of higher-level planning objectives, including those of the National Planning Framework, the Regional Spatial and Economic Strategy for the Eastern and Midland Region, the Regional Spatial and Economic Strategy for the Southern Region and the County Development Plans. These documents set out various requirements for the content of the Plan including on topics such as land use zoning and the sustainable development of towns, including Carlow-Graiguecullen.

4.3 Alternatives Already Considered

The preparation of the Carlow and Laois County Development Plans and associated SEA process already considered various different types of alternatives, including those relating to land use zoning and densities. The selected alternatives for the County Development Plans set requirements for lower tier planning in the County and have been integrated into the Local Area Plan as appropriate.

4.4 Compact Development Alternatives

Carlow County Council and Laois County Council in preparing a Draft Joint Urban Local Area Plan (JULAP) for public display for Carlow-Graiguecullen developed the following alternatives for compact development (there are various alternative components under each alternative):

Compact Development Alternative A: "More Consolidated, More Compact Development"

- Carlow-Graiguecullen to reach population allocation, resulting in balanced orderly development and implementation of the Core Strategies of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027.
- This alternative involves preparing the JULAP using a Serviced/Serviceable Land and Infrastructure Assessment approach. Methodologies for this approach are set out in higher level documents, including the National Planning Framework and the 2013 Local Area Plan Guidelines for Planning Authorities.
- The infrastructure required to be in place to achieve the growth targets is already in place or planned.
- Residential Development to take place on New Residential and Existing/Infill Residential lands over the lifetime of the JULAP, with 30% expected on Town Centre lands.
- Development proposals would be developed in a planned and coordinated manner focused within the town centre.
- Intervention areas, including strategic and regeneration sites are identified with clear design and proposed uses provided.

Under this Compact Development Alternative, the Town would reach its population allocation under the core strategies as contained in the Carlow and Laois County Development Plans.

The approach under this alternative would allow for water supply, waste water, compact growth, public transport and co-ordinated development considerations to be integrated into the Plan to the highest degree.

The infrastructure required to be in place to achieve the growth targets is already in place or planned under this alternative.

Under this alternative there would be:

- More optimum use of land and resources, with positive role for addressing climate change, such as potential for reduced carbon heavy travel patterns.
- Greater potential for modal shift to sustainable travel such as walking, cycling and public transport, with knock on benefits for climate resilience in the joint urban area.
- Use of already serviced lands in more central and built-up urban area could lead to potential reduced costs for delivery of new supporting infrastructure.
- Creation of more liveable built environments, with greater accessibility to services and amenities for local communities.

Compact Development Alternative B “Less Consolidated, Less Compact Development”

- Carlow-Graiguecullen to reach population allocation, resulting in balanced orderly development and implementation of the core strategies of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027.
- This alternative involves preparing the JULAP while not using the Serviced Land and Infrastructure Assessment approach.
- Additional infrastructure would be required to accommodate sporadic development, more than would be required for Alternative A “More Consolidated, More Compact Development” and some development may have to be serviced by private waste water treatment systems which would have to be properly maintained.
- Residential Development to take place on New Residential, Existing/Infill Residential and certain peripheral, outer fringe lands (beyond the existing development envelope) over the lifetime of the Plan, with 30% less likely to be achieved on Town Centre lands (in comparison with Alternative A “More Consolidated, More Compact Development”).
- Town centre development would be sporadic and uncoordinated around the Town centre zonings.
- Industry would occur at locations including those close to residential development.
- Strategic and regeneration sites are identified but no clear guidance on the design parameters or uses provided.

Under this Compact Development Alternative, the Town would reach its population allocation under the core strategies as contained in the Carlow and Laois County Development Plans.

The approach under this alternative would not allow for water supply, waste water, compact growth, public transport and co-ordinated development considerations to be integrated into the Plan to the highest degree.

Additional infrastructure would be required to accommodate sporadic development, more than would be required for Alternative A ‘More Consolidated, More Compact Development’ and some development may have to be serviced by private waste water treatment systems which would have to be properly maintained.

Under this alternative there would be:

- An increase in car dependency and associated carbon heavy travel patterns, which would undermine efforts aimed at securing climate resilience.
- Increased suburban pattern of residential development with potential for self-contained and disconnected built environments.

- Reduced potential for modal shift to sustainable travel options such as walking, cycling and public transport.
- Potential for increased costs associated with the delivery on new supporting infrastructure (roads, footpaths etc.) in more peripheral and outer suburban areas.
- Increased costs for the delivery of necessary supporting infrastructure for urban fringe, outer suburban areas and greenfield sites.

Selected Compact Development Alternative for the Plan: A “More Consolidated, More Compact Development”

4.5 Ecosystem Services Approach Alternatives

The importance of fulfilling natural capital¹⁸ and ecosystem¹⁹ service obligations has increasingly emerged in recent years. An Ecosystems Services Approach would provide a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. An Ecosystems Services Approach would include the integration of ecological considerations at a local level across the JULAP area.

Ecosystem Services Approach Alternative A: A JULAP that follows an Ecosystems Services Approach to a greater degree. This alternative would, to the greatest extent:

- Underpin the requirement for nature-based solutions (and green infrastructure) to be incorporated into development proposals at the detailed design stage, with corresponding recognition of the role natural environment in moderating and adapting to the effects of climate change.
- Contribute to flood prevention and storage capacity measures for development proposals in the joint urban area.
- In the formulation of the layout and design of development proposals, contribute to a focus on the conservation, protection and restoration of the natural environment in the joint urban area.
- Encourage the use of SuDS for development proposals in the joint urban area, offering a more sustainable approach to the management of urban storm water runoff than impermeable surfaces, and conventional underground pipe and storage-based solution. This would contribute to offsetting the impacts of climate change and increase climate resilience.
- Provide more benefits for recreation, amenity, and biodiversity.
- Promote more healthy living environments for local communities.
- Contribute to a reduction in greenhouse gas emissions.
- Improve health and wellbeing.

Ecosystem Services Approach Alternative B: A JULAP that does not follow, or follows to a lesser degree, an Ecosystems Services Approach. This alternative would result in:

- Greater potential for focus and reliance on conventional less sustainable surface water drainage methods in the joint urban area, such as single function piped drainage and attenuation/storage measures.
- Reduced climate resilience in the built environment.
- Reduced scope for introduction of nature-based flood alleviation measures in development proposals.
- Greater potential for increased costs in the delivery of conventional surface water drainage infrastructure.
- Greater potential for biodiversity and habitat fragmentation.
- Reduced potential for urban greening measures in the built environment.

Selected Ecosystem Services Approach Alternative for the Plan: A “A JULAP follows an Ecosystems Services Approach to a greater degree”

¹⁸ Renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals).

¹⁹ Ecosystems are multifunctional communities of living organisms interacting with each other and their environment. Ecosystems provide a series of services for human well-being (ecosystem services) either directly or indirectly contributing towards human wellbeing.

4.6 Area Based Transport Assessment Alternatives

In line with the County Development Plans, the creation of a compact and connected Carlow-Graigucullen joint urban area could be achieved by integrating land use and transportation policy, thus promoting compact climate resilient growth and ensuring that people can easily access their homes, employment, education and the services they require by walking cycling or use of public transport. An Area Based Transport Assessment would seek to maximise opportunities for the integration of land use and transport planning, with an emphasis on cycling, walking and public transport and delivering on the “10-minute neighbourhood” concept.

Area Based Transport Assessment Alternative A: Inform the JULAP with an Area Based Transport Assessment, which focuses on delivering travel solutions that support moving people from the private car to more sustainable modes. This alternative would:

- Support greater alignment between and integration of land use planning and transport planning.
- Ensure the assessment of transport demand and its associated impact informs the scale of development proposals, including location, density, required transport infrastructure etc.
- Facilitate a greater shift towards a more sustainable, healthy, and low carbon-built environment.
- Prioritise of active travel measures and considerations in the formulation of development proposals, including the consideration of suitable land for development.
- Promote and encourage a modal shift from the private car to walking and cycling, particularly for short to medium distance trips.
- Prioritise walking, cycling and public transport accessibility.
- Result in improvements in the built environment for the safety and security of those walking and cycling.
- Provide greater focus on compliance with the principles, approaches and standards in the Design Manual for Urban Roads and Streets (DMURS 2013-2019).
- Facilitate the implementation of the 10-Minute town concept.
- Potentially reduce traffic congestion at peak traffic times, improving road network reliability.

Area Based Transport Assessment Alternative B: Do not inform the JULAP with an Area Based Transport Assessment, which focuses on delivering travel solutions that support moving people from the private car to more sustainable modes, relying solely on existing provisions, including those of the County Development Plans. This alternative would:

- Increase the potential for land use planning and developments aspects of the JULAP to be considered in isolation of transport planning considerations.
- Mean that the assessment of existing traffic, transport, and movement conditions within the JULAP area would not be taken into account in the formulation of policies and objectives.
- Undermine ability to plan for efficient movement of people and services within the JULAP area.
- Limit the ability and scope to plan for required transport interventions in the JULAP area.
- Not inform site specific transport assessment for development proposals with an ABTA.
- Reduce support for modal shift from private car travel to active travel, including walking and cycling.

Selected Area Based Transport Assessment Alternative for the Plan: Alternative A

4.7 Built Heritage Alternatives

Built heritage in the Carlow-Graiguecullen joint urban area includes both architectural and archaeological heritage. These alternatives consider the degree to which built heritage and conservation are provided for at a local level in Carlow-Graiguecullen.

Built Heritage Alternative A: A JULAP that adds detailed, local-level provisions to the existing planning framework relating to the conservation of built heritage. Built Heritage Alternative A would:

- Provide a focus for heritage-led regeneration in the existing built environment including conservation, restoration and reuse of built heritage assets.
- Support the implementation of a Heritage Initiative Plan for Carlow Town.
- Ensure that the conservation of built heritage, including architectural heritage (protected structures) and archaeology is a key consideration, in the formulation of development proposals, as appropriate.
- Promote and support the conservation of the special character and setting of designated Architectural Conservation Areas in the joint urban area.
- Promote the protection, retention, and public awareness of vernacular architecture in the joint urban area not listed as protected structures or located in ACAs.
- Promote and support the importance of climate-proofing built heritage assets and by reference to Department of Culture Heritage and the Gaeltacht 'Built and Archaeological Heritage, Climate Change Sectoral Adaptation Plan' (2019).

Built Heritage Alternative B: A JULAP that does not add detailed, local-level provisions to the existing planning framework relating to the conservation of built heritage, relying solely on existing provisions, including those included as part of the County Development Plans. Built Heritage Alternative B would:

- Not provide for sufficient consideration of the built heritage in the joint urban area at detailed design stage for development proposals.
- Increase the potential for loss of and/or negative impacts on the character and setting of historic built fabric in the joint urban area, including protected structures and vernacular architecture.
- Increase the potential to undermine the special character and setting of the designated ACAs in the joint urban area.
- Not support the implementation of a Heritage Initiative Plan for Carlow Town.

Selected Built Heritage Alternative for the Plan: Alternative A

4.8 Reasons for Choosing the Selected Alternative in light of Other Reasonable Alternatives Considered

Alternatives were selected for the JULAP having regard to both:

1. The environmental effects which are identified by the SEA and are summarised above; and
2. Planning - including social and economic - effects that also were considered.

Section 5 Summary of Effects arising from Plan

Table 5.1 summarises the overall environmental effects arising from Draft Plan provisions. The effects encompass all in-combination/cumulative effects arising from implementation of the Plan. The potentially significant adverse environmental effects (if unmitigated) arising from implementation of the Plan are detailed as are residual effects, taking into account mitigation integrated into both the Draft Plan and the Carlow and Laois County Development Plans – see Section 6.

Environmental impacts which occur will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors. Environmental impacts which occur will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors. Strategic Environmental Objective (SEO) codes are taken from Table 3.1.

Stage 2 Appropriate Assessment (AA) is also being undertaken alongside the preparation of the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The AA assesses the effects of the Plan on European Sites designated for certain habitats and species. The emerging conclusion of the AA is that the Draft Plan will not affect the integrity of the Natura 2000 network²⁰.

A Strategic Flood Risk Assessment (SFRA) document accompanies this SEA Environmental Report and the Draft Plan. Requirements in relation to SFRA are provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of Environment and Office of Public Works, 2009) and associated Department of the Environment, Community and Local Government Circular PL2/2014. Flood risk management and drainage provisions are already in force through the County Development Plans and related provisions have been integrated into the JULAP. In addition, land use zoning contained within the Draft Plan has been informed by the SFRA process and associated delineation of flood risk zones.

²⁰ Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be:

(a) no alternative solution available;
(b) imperative reasons of overriding public interest for the plan/programme/project to proceed; and
(c) adequate compensatory measures in place.

Table 5.1 Overall Findings –Effects arising from the Plan

Environmental Component	Environmental Effects, in combination with the wider planning framework			SEO Codes
	Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP, the Eastern and Midland RSES and Southern RSES, the Carlow and Laois County Development Plans and adjacent Development Plans and lower-tier land use plans.			
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> Contribution towards protection of ecology (including designated sites, ecological connectivity, habitats) by facilitating development of lands (including those within and adjacent to the town's core areas) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-served lands elsewhere in the Plan area and beyond. Contribution towards the maintenance of existing green infrastructure and associated ecosystem services, listed species, ecological connectivity and non-designated habitats. Contribution towards protection and/or maintenance of biodiversity and flora and fauna by contributing towards the protection of natural capital including the environmental vectors of air, water and soil. Biodiversity and flora and fauna includes biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species (including birds and bats), listed/protected species, ecological connectivity and non-designated habitats (including terrestrial and aquatic habitats), and disturbance to biodiversity and flora and fauna – including terrestrial and aquatic biodiversity and flora and fauna. Sustains existing sustainable rural management practices – and the communities who support them – to ensure the continuation of long-established managed landscapes and the flora and fauna that they contain. 	<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; Habitat loss, fragmentation and deterioration, including patch size and edge effects; and Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species such as birds (e.g. swifts) and bats. 	<ul style="list-style-type: none"> Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces. Losses or damage to ecology (these would be in compliance with relevant legislation). 	BFF

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	Environmental Effects, in combination with the wider planning framework			SEO Codes
	Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP, the Eastern and Midland RSES and Southern RSES, the Carlow and Laois County Development Plans and adjacent Development Plans and lower-tier land use plans.			
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Population and Human Health	<ul style="list-style-type: none"> • Promotion of economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management. • Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the town's core areas) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the Plan area and beyond • Contribution towards the protection of human health by facilitating development of lands (including those within and adjacent to the town's core areas) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contributes towards protection of human health as a result of contributing towards the protection of natural capital including environmental vectors, including air and water. 	<ul style="list-style-type: none"> • Potential adverse effects arising from flood events. • Potential interactions if effects arising from environmental vectors. 	<ul style="list-style-type: none"> • Potential interactions with residual effects on environmental vectors – please refer to residual adverse effects under “Soil”, “Water” and “Air and Climatic Factors” below. 	PHH
Soil	<ul style="list-style-type: none"> • Contribution towards the protection of soils (including those used for agriculture) and designated sites of geological heritage by facilitating development of lands (including those within and adjacent to the town's core areas) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contribution towards the protection of the environment from contamination the highest standards of remediation. 	<ul style="list-style-type: none"> • Potential adverse effects on the hydrogeological and ecological function of the soil resource, including as a result of development on contaminated lands. • Potential for riverbank erosion. 	<ul style="list-style-type: none"> • Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces. • Riverbank erosion will continue to occur naturally over time and is likely to be enhanced by climate change. 	S

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	Environmental Effects, in combination with the wider planning framework Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP, the Eastern and Midland RSES and Southern RSES, the Carlow and Laois County Development Plans and adjacent Development Plans and lower-tier land use plans.			SEO Codes
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Water	<ul style="list-style-type: none"> Contribution towards the protection of water by facilitating development of lands (including those within and adjacent to the town's core areas) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. Contributions towards the protection of water resources including the status of surface and groundwaters and water-based designations. Contribution towards flood risk management and appropriate drainage. 	<ul style="list-style-type: none"> Potential adverse effects upon the status of water bodies and entries to the WFD Register of Protected Areas (ecological and human value), arising from changes in quality, flow and/or morphology. Increase in flood risk and associated effects associated with flood events. 	<ul style="list-style-type: none"> Any increased loadings as a result of development to comply with the River Basin Management Plan. Flood related risks remain due to uncertainty with regard to extreme weather events – however such risks will be mitigated by measures that have been integrated into the Plan. 	W
Material Assets	<ul style="list-style-type: none"> Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the town's core areas) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the Plan area and beyond. Contribution towards compliance with national and regional water services and waste management policies. Contribution towards increase in renewable energy use by facilitating renewable energy and electricity transmission infrastructure developments. Contribution towards limits in increases in energy demand from the transport sector by facilitating sustainable compact growth. Contribution towards reductions in average energy consumption per capita including promoting sustainable compact growth, sustainable mobility, sustainable design and energy efficiency. 	<ul style="list-style-type: none"> Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts). Failure to adequately treat surface water run-off that is discharged to water bodies (water services infrastructure and capacity ensures the mitigation of potential conflicts). Failure to comply with drinking water regulations and serve new development with adequate drinking water (water services infrastructure and capacity ensures the mitigation of potential conflicts). Increases in waste levels. Potential impacts upon public assets and infrastructure. Interactions between agricultural waste and soil, water, biodiversity and human health – including as a result of emissions of ammonia from agricultural activities (e.g. manure handling, storage and spreading) and the production of secondary inorganic particulate matter. 	<ul style="list-style-type: none"> Exceedance of capacity in critical infrastructure risks remain, including due to uncertainty with regard to climate – however, such risks will be mitigated by: measures, including those requiring the timely provision of critical infrastructure, and compliance with the Water Framework Directive and associated River Basin Management Plan. Residual wastes to be disposed of in line with higher-level waste management policies. Any impacts upon public assets and infrastructure to comply with statutory planning/consent-granting framework. 	MA

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	Environmental Effects, in combination with the wider planning framework Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP, the Eastern and Midland RSES and Southern RSES, the Carlow and Laois County Development Plans and adjacent Development Plans and lower-tier land use plans.			SEO Codes
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Air and Climatic Factors	<ul style="list-style-type: none"> Contribution towards climate mitigation and adaptation by facilitating compact development of lands (including those within and adjacent to the town's core areas) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-served lands elsewhere in the Plan area and beyond. In combination with other plans, programmes etc., contribution towards the objectives of the wide policy framework relating to climate mitigation and adaptation, and associated contribution towards maintaining and improving air quality and managing noise levels, including through measures relating to: <ul style="list-style-type: none"> Sustainable compact growth; Sustainable mobility, including walking, cycling and public transport; Drainage, flood risk management and resilience; Sectors including agriculture, residential heating and infrastructure; Sustainable design, energy efficiency and green infrastructure. 	<ul style="list-style-type: none"> Potential conflict between development under the Plan and aiming to reduce carbon emissions in line with local, national and European environmental objectives. Potential conflicts between transport emissions, including those from cars, and air quality²¹. Potential conflicts between increased frequency of noise emissions and protection of sensitive receptors²². Potential conflicts with climate adaptation measures including those relating to flood risk management. 	<ul style="list-style-type: none"> An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable compact growth and sustainable mobility. Interactions between noise emissions and sensitive receptors. Various provisions have been integrated into the Plan to ensure that noise levels at sensitive receptors will be minimised. 	AC
Cultural Heritage	<ul style="list-style-type: none"> Contributes towards protection of cultural heritage elsewhere by facilitating development within the Plan area. Contributes towards protection of cultural heritage within the Plan area by facilitating brownfield development and regeneration. 	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities. 	<ul style="list-style-type: none"> Potential effects on known architectural and archaeological heritage and unknown archaeology however, these will occur in compliance with legislation. 	CH
Landscape	<ul style="list-style-type: none"> Contributes towards protection of wider landscape and landscape designations by facilitating development within the Plan area. 	<ul style="list-style-type: none"> Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape. 	<ul style="list-style-type: none"> Landscapes will change overtime as a result of natural changes in vegetation cover combined with new developments that will occur in compliance with the Plan's landscape protection measures. 	L

²¹ Although interventions would be likely to result in an overall reduction in traffic flows and associated interactions with air, noise and human health, there would be potential for displacement of traffic to lead to localised increases traffic flows and associated localised potential impacts in terms of increased population exposure to air pollutants and/or elevated noise levels, both within the Plan area and beyond.

²² Although interventions would be likely to result in an overall reduction in traffic flows and associated interactions with air, noise and human health, there would be potential for displacement of traffic to lead to localised increases traffic flows and associated localised potential impacts in terms of increased population exposure to air pollutants and/or elevated noise levels, both within the Plan area and beyond.

Section 6 Mitigation and Monitoring Measures

6.1 Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan. Various environmental sensitivities and issues have been communicated to the Councils through the SEA, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes. By integrating all related recommendations into the Draft Plan, the Councils have ensured that both the beneficial environmental effects of implementing the Plan have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

Mitigation was achieved through:

- Strategic work undertaken by the Councils to ensure contribution towards environmental protection and sustainable development²³;
- Considering alternatives for the Plan²⁴;
- The integration of environmental considerations into zoning provisions of the Plan²⁵;
- The integration of individual SEA, AA and SFRA provisions into the text of the Local Area Plan; and
- The integration of individual provisions into the text of the existing, already in force, County Development Plans.

6.2 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. Monitoring is based around indicators that allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives identified at Table 3.1 and used in the evaluation. Monitoring indicators, targets, sources and remedial action is provided at Table 6.1 overleaf.

²³ Far in advance of the placing of the Draft Plan on public display, Carlow and Laois County Councils undertook various works in order to inform the preparation of the Plan.

Strategic work undertaken by the Councils includes background work in relation to Plan provisions, including those relating to:

- Development Strategy;
- Population, Housing and Compact Growth Climate Action;
- Town Centre and Regeneration;
- Economic Development;
- Infrastructure and Transport;
- Built and Natural Heritage;
- Climate Action and Flood Risk Assessment;
- Social and Community Infrastructure; and
- Land Use Zoning.

The undertaking of the SEA process was part of this strategic work and contributed towards the integration of environmental considerations into individual Local Area Plan provisions.

²⁴ Although strategic alternatives in relation to the content of the Plan were significantly limited for the Plan (see Section 4), as part of the Plan preparation/SEA process alternatives for the Plan were considered. These alternatives were assessed by the SEA process and the findings of this assessment informed the selection of alternatives for the Plan, facilitating an informed choice with respect to the type of Plan that was prepared and placed on public display.

²⁵ Environmental considerations, including those relating to ecology, cultural heritage, landscape and water, were integrated into the Draft Plan's zoning through an interdisciplinary approach that was informed by the environmental considerations identified by the SEA, AA and SFRA processes.

Zoning has been applied in a way that primarily seeks to achieve sustainable and compact growth, taking into account the various requirements set out in the higher-level NPF, Eastern and Midland RSES, Southern RSES and Carlow and Laois County Development Plans.

Flood risk management and drainage provisions are already in force through the County Development Plans and related provisions have been integrated into the JULAP. In addition, land use zoning contained within the Draft Plan has been informed by the SFRA process and associated delineation of flood risk zones. The detailed Plan preparation process undertaken by the Planning Department combined with specialist input from the SFRA process facilitated zoning that helps to avoid inappropriate uses being provided for in areas of elevated flood risk.

Table 6.1 Indicators, Targets, Sources and Remedial Action

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Biodiversity, Flora and Fauna	BFF	<ul style="list-style-type: none"> Condition 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 Heritage and Biodiversity 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)²⁶ DHLGH National Birds Directive Monitoring Report for the under Article 12 (every 3 years)²⁷ Consultations with the NPWS²⁸ 	<ul style="list-style-type: none"> Where condition of European sites is found to be deteriorating this will be investigated with the Regional Assemblies 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.
		<ul style="list-style-type: none"> Number of spatial plans that have included ecosystem services content, mapping and policy to protect 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 Heritage and Biodiversity Plans 	<ul style="list-style-type: none"> Internal review of local land use plans 	<ul style="list-style-type: none"> 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 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 for the protection of Biodiversity and flora and fauna – see County Development Plan Chapters 10 “Natural and Built Heritage” (Carlow) and 11 “Biodiversity and Natural Heritage” (Laois) 	<ul style="list-style-type: none"> For planning permission to be only granted when applications demonstrate that they comply with all Plan measures providing for the protection of biodiversity and flora and fauna – see County Development Plan Chapters 10 “Natural and Built Heritage” (Carlow) and 11 “Biodiversity and Natural Heritage” (Laois) 	<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

²⁶ Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on European sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

²⁷ Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on European sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

²⁸ Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on European sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
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 County Development Plan Chapter 4 "Enterprise and Employment" (Carlow) and Chapter 6 "Economic Development" (Laois) 	<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 economic growth as provided for by County Development Plan Chapter 4 "Enterprise and Employment" (Carlow) and Chapter 6 "Economic Development" (Laois) 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) 	<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
		<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"> 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 previous CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Carlow and Laois County Councils' Climate Change Adaptation Strategies 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above previous CSO figures, the Councils will coordinate with the Regional Assemblies, 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 Land)	S	<ul style="list-style-type: none"> Proportion of population growth occurring on infill and brownfield lands compared to greenfield (also relevant to Material Assets) 	<ul style="list-style-type: none"> Maintain built surface cover nationally to below the EU average of 4% as per the NPF 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 	<ul style="list-style-type: none"> EPA Geoportal Compilation of greenfield and brownfield development for the DHLGH AA/Screening for AA for each application 	<ul style="list-style-type: none"> 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 Councils will liaise with the Regional Assemblies to establish reasons and coordinate actions to address constraints to doing so.
		<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"> Dispose of contaminated material in compliance with EPA guidance and waste management requirements 	<ul style="list-style-type: none"> Internal review of grants of permission where contaminated material must be disposed of 	<ul style="list-style-type: none"> Consultations with the EPA and Development Management
		<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

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Water	WV	<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 ²⁹ 	<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, Uisce Éireann 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 Councils will consider whether it is necessary to coordinate a response with the Regional Assemblies, EPA and Uisce Éireann to achieve the necessary capacity.
		<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 Councils 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 Uisce Éireann infrastructure for all key growth towns in line with Uisce Éireann 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 the Plan 	<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 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, Uisce Éireann 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"> Internal monitoring of likely significant environmental effects of grants of permission Consultations with the Uisce Éireann DHLGH in conjunction with Local Authorities 	<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 Councils will consider whether it is necessary to coordinate a response with the Regional Assemblies, EPA and Uisce Éireann to achieve the necessary capacity.

²⁹ Including monitoring of water quality and nitrogen deposition due to bioenergy and agricultural projects where available

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Carlow and Laois County Councils' Climate Change Adaptation Strategies 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above previous CSO figures, the Councils will coordinate with the Regional Assemblies, 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 previous National Travel Survey levels NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	<ul style="list-style-type: none"> Decrease in proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter 	<ul style="list-style-type: none"> CSO data Data from the National Travel Survey EPA Air Quality Monitoring Consultations with Department of Transport and Department of Environment, Climate and Communications 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above previous CSO figures, Council will coordinate with the Regional Assemblies, DHLGH, DECC and NTA to develop a tailored response. See also entry under Population and human health above
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 Carlow and Laois County Councils' Climate Change Adaptation Strategies 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 Councils will liaise with the Regional Assemblies 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 provisions of the Plan 		
		<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 previous levels 	<ul style="list-style-type: none"> Decrease in the proportion of journeys made by residents of the using private fossil fuel-based car compared to previous levels 	<ul style="list-style-type: none"> CSO data Monitoring of Carlow and Laois County Councils' Climate Change Adaptation Strategies 2019-2024 	<ul style="list-style-type: none"> Where trends toward carbon reduction are not recorded, the Councils will liaise with the Regional Assemblies 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 previous CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Carlow and Laois County Councils' Climate Change Adaptation Strategies 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above previous CSO figures, the Councils will coordinate with the Regional Assemblies, the DHLGH, DECC and NTA to develop a tailored response.

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
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, protected from adverse effects resulting from development which is granted permission under the Plan 	<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 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 visitor or development pressure is causing negative effects on designated archaeological or architectural heritage, the Councils will work with Regional Assemblies, Fáilte Ireland and the National Monuments Service and other stakeholders, as relevant, to address pressures through additional mitigation.
		<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 	<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. 	
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 Councils will re-examine Plan provisions and the effectiveness of their implementation