

COUNTY CARLOW'S GREEN INFRASTRUCTURE STRATEGY

MAPPING & MANAGEMENT MANUAL



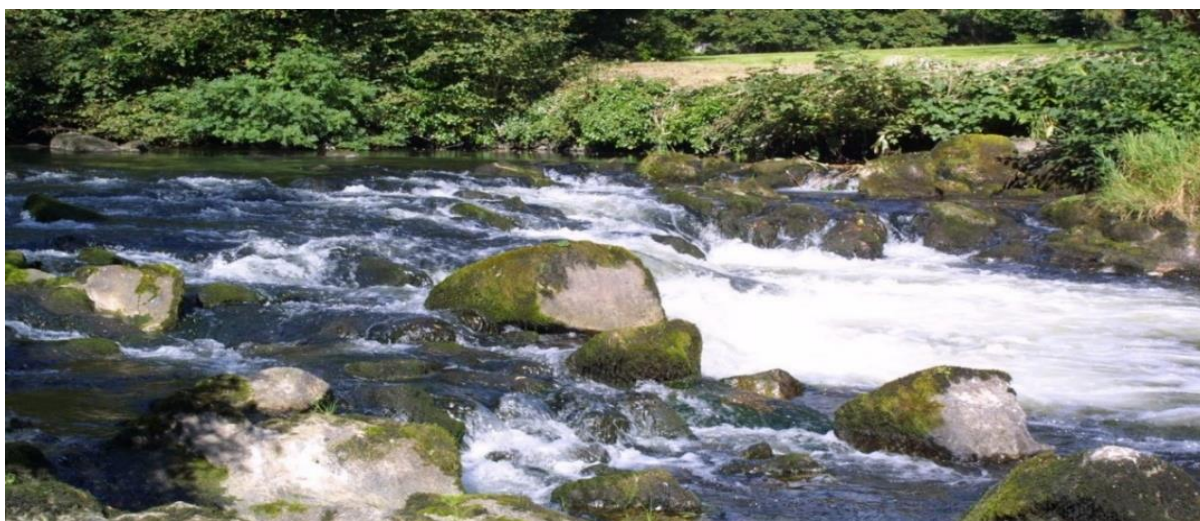


TABLE OF CONTENTS

Introduction:	3
Green Infrastructure & Ecosystem Services:	4
Mapping a County-wide Network:.....	6
Management Manual for Urban Areas in County Carlow	9
Mapping a Carlow Town Pollinator-Friendly Green Infrastructure Network:	10
Appendices.....	12

Introduction:

The preparation of a Green Infrastructure Strategy for County Carlow is an objective of the Carlow County Development Plan 2022 - 2028, and will inform the Carlow Climate Action Plan.

This document contains Maps (Appendix 1 and Appendix 2) of County Carlow's Green Infrastructure Network, and a Management Manual for specific sites, which, when combined with the existing framework of policies and objectives within the Carlow County Development Plan 2022 – 2028 (see Appendix 3), will constitute the County Carlow Green Infrastructure Strategy.

For the purpose of this document, Green Infrastructure will include waterways, which are often referred to as "Blue Infrastructure".

The Green Infrastructure Maps (Appendix 1 and Appendix 2) will remain active, and be updated as new data becomes available through the implementation of the County Carlow Biodiversity Action Plan 2023-2025 and Carlow County Council Climate Action Plan.

The County Carlow Green Infrastructure Strategy and the County Carlow Biodiversity Action Plan 2023-2025 (County Carlow BAP) are interrelated, in that they both aim to conserve ecosystems in County Carlow.

Ecosystems refer to the relationships between different species, their habitats and their local non-living environment (geology, hydrology and micro-climate), and they provide certain services for society, namely regulating services, provisioning services, supporting services, and cultural services.

While the County Carlow BAP concerns the conservation of all ecosystems, the County Carlow Green Infrastructure Strategy prioritises those ecosystems that deliver the most in terms of regulating and supporting ecosystem services, particularly as they relate to climate mitigation and adaptation.

To be able to deliver its full range of services, an ecosystem must be healthy and functioning, with minimal interference to its form and extent. This can often be challenging, as the history of development in County Carlow generally predates our understanding of ecosystem services. This is particularly evident in the case of rivers and their associated floodplains, many of which have been historically altered or built on.

This Mapping and Management Manual is in two parts:

1. Mapping of a county-wide Green Infrastructure Network of priority ecosystems, which will complement the relevant policies and objectives, as set out in the Carlow County Development Plan 2022 – 2028.
2. An urban focus, trialled in Carlow Town initially, with a view to replicating in all urban areas, setting out a pollinator-friendly policy as follows: “That no pollinator in Carlow Town will have to travel more than 200metres in order to find a food source (green space of a minimum size, that is managed for biodiversity).”

Green Infrastructure & Ecosystem Services:

The conservation of ecosystem diversity forms part of the United Nation’s Sustainable Development Goals, and is often linked to the services that ecosystems can provide for society. These services can be broken down into regulating services, provisioning services, supporting services, and cultural services, and they have become increasingly recognised and valued as a result of our improved understanding of climate change, and the impacts it is having both globally and locally.

1. **Provisioning Services:** Drinking Water, Food, Medicine, Clothing Textiles, Shelter Materials (timber), Fuels.
2. **Regulating Services:** Water Flow (flood management and drainage), Water Purification, Air Quality, Pollination, Organic Matter Decomposition, Carbon Storage.
3. **Supporting Services:** Soil Creation, Nutrient Cycling, Photosynthesis, Water Cycle.
4. **Cultural Services:** Folklore and Heritage, Religious and Spiritual, Artistic and Aesthetic, Knowledge and Social Relationships.

The Carlow County Development Plan 2022 – 2028 (CDP 2022-2028) uses the following definition of Green Infrastructure: *“a strategically planned network of high quality natural and semi natural areas with other environmental features (ecosystems), which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings”*

The CDP 2022-2028 specifies that in order to qualify as Green Infrastructure, the ecosystem and associated environmental features must be of high quality and capable of delivering more than just green spaces (i.e. regularly mown grassed areas). For example, a town park with a mixture of habitats, canopy covers, grass management regimes and amenity facilities, will act

as a cool corridor, absorb excess water run-off, support local biodiversity, and offer an attractive outdoor space for recreation.

The CDP 2022-2028 also provides a hierarchy of potential Green Infrastructure features as outlined below:

1. Protected areas of high biodiversity value
2. Healthy functioning ecosystems outside of protected sites, particularly:
 - Large woodlands
 - Waterbodies and wetland areas, e.g. rivers, riparian zones, floodplains, wetlands (bogs, fens, marshes, etc.)
3. Smaller natural and semi-natural areas, e.g. woodland, scrub, species-rich grassland
4. Large parks, gardens and graveyards, e.g. town parks and formal country demesnes
5. Green corridors, e.g. hedgerows, streams/drains, roadside verges, and cycling and walking routes
6. Amenity spaces, e.g. play areas, playing fields, and public open spaces in housing estates
7. Domestic gardens, street trees and civic spaces in urban areas.



Mapping a County-wide Network:

For the purpose of creating an initial county-wide base-map, priority will be given to features identified under headings 1-4 above, as identified by the Carlow County Development Plan 2022-2028 & County Carlow Biodiversity Action Plan 2023-2025. In particular, priority has been given to features that contribute to climate mitigation in County Carlow, due to their nature and scale. These are set out in Table 1 below.

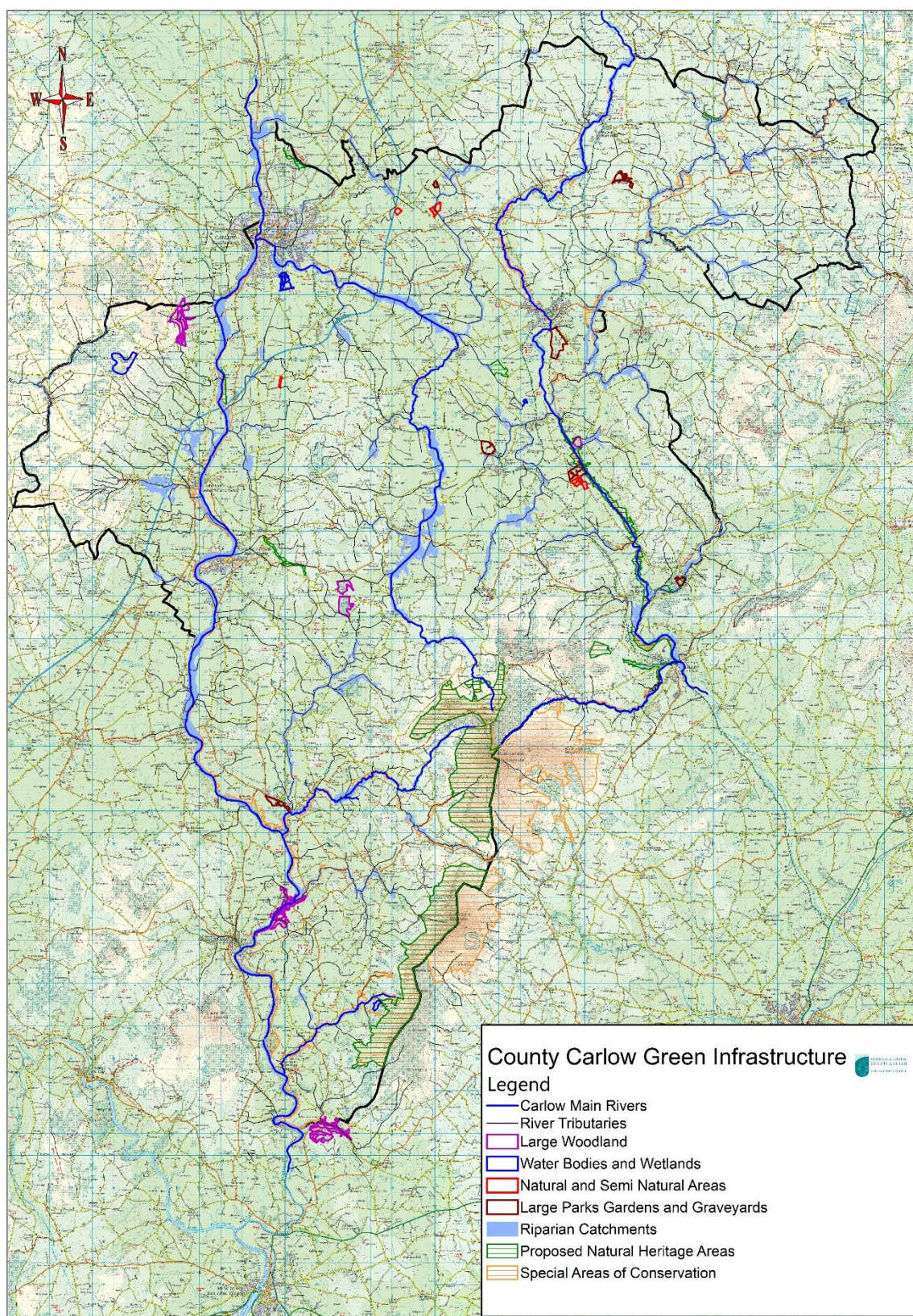
This map will be further updated with the following in due course:

1. Verified wetlands following ground-truthing of the 114 potential wetland sites identified by desktop survey as part of the Map of Irish Wetlands (County Carlow BAP Action)
2. Non-plantation woodlands in excess of 15 hectares, or similar carbon sequestration resource as identified by the Carlow County Council Climate Action Plan.
3. Any other healthy and functioning ecosystem identified during the implementation of the County Carlow BAP.

Table 1: County Carlow Green Infrastructure

Protected areas of high biodiversity value
<ul style="list-style-type: none"> • River Barrow and River Nore SAC (Site Code 002162) • Slaney River Valley SAC, including Slaney River Valley pNHA (Site Code 000781) • Blackstairs Mountains SAC, including Blackstairs Mountains pNHA (Site Code 000770) • Ardristan Fen pNHA (Site Code 000788) • Baggots Wood pNHA (Site Code 000792) • Ballymoon Esker pNHA (Site Code 000797) • Cloghrystick Wood pNHA (Site Code 000806) • Johns Hill pNHA (Site Code 000808) • Oak Park pNHA (Site Code 000810)
Large and healthy functioning ecosystems outside of protected sites (Woodlands)
<ul style="list-style-type: none"> • Ballin Temple Wood • Toberbride Wood • Drummond Wood • Clashganny Forest • Clongrennan Wood
Large and healthy functioning ecosystems outside of protected sites (Waterbodies and wetland areas)
<ul style="list-style-type: none"> • River Burrin, R. Mountain, R. Aughavaud, and R Clody, including their riparian zones. • River Barrow floodplain from Cloydagh to Powerstown and at Sliguff • All named rivers • Drummin Bog • Red Bog at Boolyvannanan/Tomard on the Ridge above Ballinabranagh/ Old Leighlin • Quinagh Fen • Pollroe Lake • Ballycrinnegan Bog
Smaller natural and semi-natural areas
<ul style="list-style-type: none"> • Ardnehue species rich grassland • Clonmelsh orchid grassland • Friarstown orchid grassland • Kilbride/Altamont orchid grassland
Large parks, gardens and graveyards
<ul style="list-style-type: none"> • Borris Demesne • Altamont Gardens • Huntington Castle • Ducketts Grove • Lisnavagh Estate • Ballykealy Manor • Mount Wolseley House

Map 1: County Carlow Green Infrastructure Network (High Resolution Version in Appendix 1):



Management Manual for Urban Areas in County Carlow

In County Carlow, the three main towns (Carlow Town, Tullow and Muine Bheag) and many smaller towns and villages, have been built along the county's rivers. These are the primary Green Infrastructure features, linking urban areas to rural areas.

However, as urban areas expand, there is an increased need to ensure Green Infrastructure is threaded through the built fabric. In the past, there has been a focus on the quantity of 'green' areas, rather than the quality of their ecosystem functions. This has been further compounded by a desire to have towns and villages look well-manicured, which has resulted in many negative practices, such as pesticide use.

The All-Ireland Pollinator Plan highlights that appropriately managed Green Infrastructure in urban areas can significantly benefit pollinator species, and that many of the required management changes contribute towards additional ecosystem services. In this regard, Carlow County Council will trial a novel Pollinator-Friendly Green Infrastructure approach. The basic premise of this approach is based on the following policy:

"That no pollinator in County Carlow's towns and villages will have to travel more than 200metres (based on average preferred foraging behaviours of pollinators) in order to find a space (minimum 5M²) that is managed for biodiversity."



Mapping a Carlow Town Pollinator-Friendly Green Infrastructure Network:

For the purpose of creating an initial base-map, priority will be given to features identified under the headings in Table 2 below (as identified in the hierarchy of potential Green Infrastructure features above).

Table 2: Carlow Town Green Infrastructure

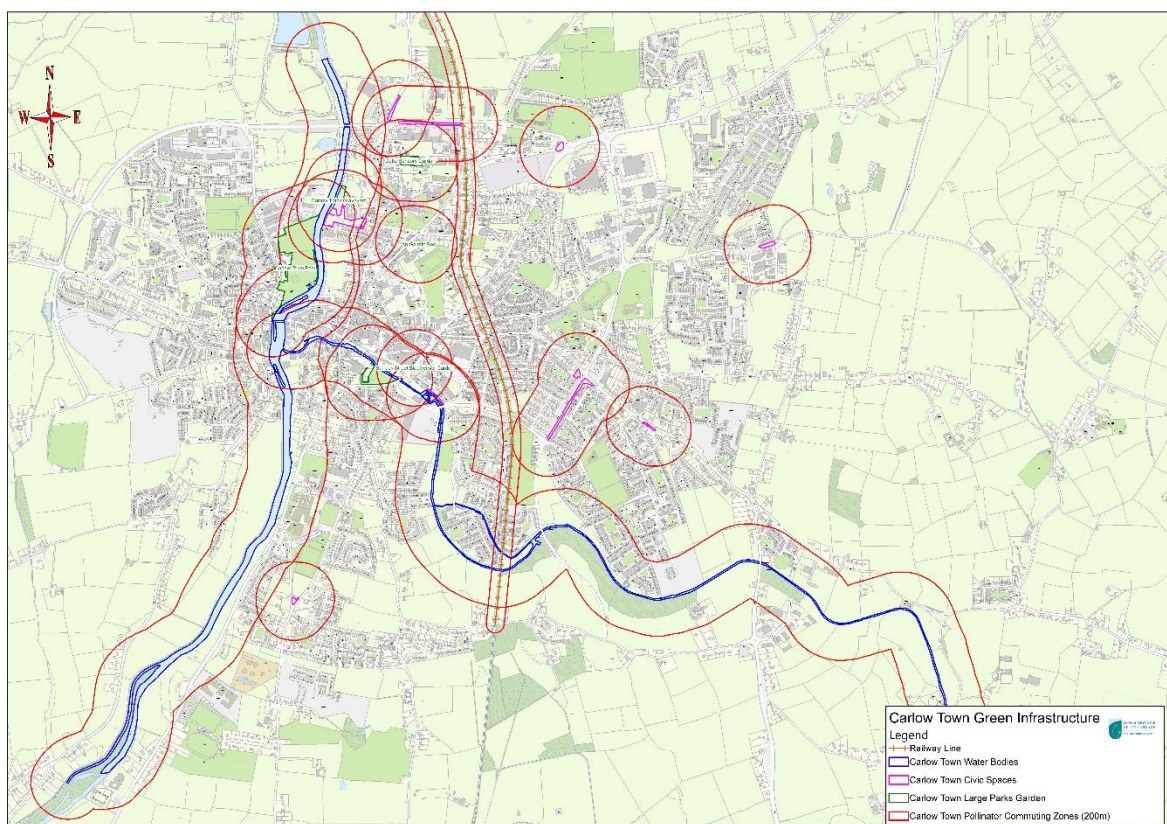
Protected areas of high biodiversity value
<ul style="list-style-type: none"> River Barrow and River Nore SAC (Site Code 002162)
Including 200metre pollinator commuting zone
Large and healthy functioning ecosystems outside of protected sites (Waterbodies and wetland areas)
<ul style="list-style-type: none"> River Burrin, including its riparian zone
Including 200metre pollinator commuting zone
Large parks, gardens and graveyards, e.g. town parks and formal country demesnes
<ul style="list-style-type: none"> Carlow Town Park Hanover Park Delta Sensory Gardens An Gairdin Beo Barrow Track Graveyard
Including 200metre pollinator commuting zone
Green corridors, e.g. hedgerows, streams/drains, roadside verges, and cycling and walking routes
<ul style="list-style-type: none"> Railway Line Barrack Street Biodiversity Garden
Including 50metre pollinator commuting zone
Amenity spaces, e.g. play areas, playing fields, and public open spaces in housing estates
<ul style="list-style-type: none"> List of Estates with mature planting and canopy cover
Domestic gardens, street trees and civic spaces in urban areas
<ul style="list-style-type: none"> Map of Low Mow-No Mow areas
Including 200metre pollinator commuting zone

In addition to the existing framework of policies and objectives for Green Infrastructure in Urban Areas set out in the Carlow County Development Plan 2022 – 2028 (see Appendix 3), the following operational policies will apply to these areas.

1. Implement a pesticide reduction strategy in these areas, except in the case of Invasive Species control, with the aim of eliminating their use in the medium-term.

2. Wherever possible, 'No Mow' will be the preferential management approach.
3. In any area greater than 5M², all planting must include a minimum of two canopy layers, i.e. wildflower planting can only take place when accompanied by shrub or tree planting.
4. All tree planting will follow the "right tree, right place" approach, taking account of both their underground and mature canopy space requirements.

Map 2: Carlow Town Green Infrastructure Network (High Resolution Version in Appendix 2):



Appendices

Appendix 1 and Appendix 2 attached as separate A2 sized Maps

Appendix 3: Green Infrastructure and Natural Heritage Policies and Objectives contained in the Carlow County Development Plan 2022 – 2028:

Green Infrastructure - Policies

It is the policy of the Council to:

- GI P1: Identify, protect, maintain, and enhance existing and planned green infrastructure assets in the County, and recognise the wide range of environmental, social, and economic benefits of green spaces and nature-based solutions by ensuring the integration of green infrastructure planning and development in the planning process.
- GI P2: Protect and enhance the biodiversity and ecological function of the County's green infrastructure network.
- GI P3: Protect and preserve landscape features which contribute to green infrastructure in the County, including trees, hedgerows, woodlands, wetlands, watercourses and other habitats.
- GI P4: Require all new development to contribute to the protection and enhancement of existing green infrastructure and the delivery of new green infrastructure, as appropriate.
- GI P5: Restrict development that would fragment or prejudice landscape features and ecological corridors which significantly contribute to the County's green infrastructure network.
- GI P6: Require proposals for large scale developments such as road or drainage schemes, wind farms, solar farms, residential schemes, industrial parks or retail schemes, to submit a green infrastructure plan as an integral part of a planning application.
- GI P7: Promote a network of walking and cycling trails to enhance accessibility to the County's green infrastructure network, and ensure such proposals are subject to feasibility (including alternatives to the use of existing green infrastructure) and route/site selection processes so that impacts to biodiversity and nature conservation interests are avoided.

- GI P8: Incorporate elements of green infrastructure into existing areas of hard infrastructure, where possible, thereby integrating these areas of the existing urban environment into the overall green infrastructure network.
- GI P9: Ensure Local Area Plans protect and manage the green infrastructure network in an integrated and coherent manner and add additional green infrastructure where possible.
- GI P10: Work collaboratively with other neighbouring Local Authorities in facilitating and supporting the development of cross-border green infrastructure networks.

Green Infrastructure - Objectives

It is an objective of the Council to:

- GI O1: Prepare a Green Infrastructure Strategy for County Carlow in accordance with international best practice and in partnership with key stakeholders and the public.
- GI O2: Ensure the Green Infrastructure Strategy for County Carlow reflects a long-term perspective, including the need to adapt to climate change, and recognises and promotes the benefits that can be achieved for the County's biodiversity, landscape, natural and cultural heritage, open space and recreation, and sustainable water management.

Green Infrastructure in Urban Areas - Policies

It is the policy of the Council to:

- GI P11: Ensure that green infrastructure informs the development management process, and that all new developments in urban areas contribute towards the protection, maintenance, and enhancement of existing green infrastructure in terms of siting, layout, design, and landscaping.
- GI P12: Encourage and support the incorporation of elements of green infrastructure and biodiversity into all new developments in urban areas, including the design of buildings and their surroundings (e.g. tree planting, green spaces and verges, planters, green roofs, living walls, bird boxes, bat roost sites etc.), and that contributes to and links with the wider green infrastructure network, in particular where similar features exist on adjoining sites.
- GI P13: Ensure that green areas and open spaces associated with new residential developments and other relevant projects provide multifunctional benefits that

enrich quality of life for local communities, ecologically rich areas that enhance biodiversity, and sustainable water management.

GI P14: Take account of Inland Fisheries guidance '*Planning for Watercourses in the Urban Environment, A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate/Flood Risk and Recreational Planning*' (2020) when considering development proposals in the vicinity of rivers and streams in urban areas.

General: Natural Heritage - Policies

It is the policy of the Council to:

NH P1: Protect, manage and enhance the natural heritage, biodiversity, landscape and environment of County Carlow in recognition of its importance as a non-renewable resource, a unique identifier, and as a natural resource asset.

NH P2: Ensure, as far as is practicable, that development does not adversely impact on wildlife habitats and species, and that biodiversity is conserved for the benefit of future generations in the interests of sustainability. This will include moving towards no net loss of biodiversity from plans adopted by and projects granted permission/authorised by the Council.

NH P3: Support and co-operate with statutory authorities such as the National Parks and Wildlife Service (NPWS) and others on measures to manage designated nature conservation sites in order to achieve their conservation objectives. Specific regard shall be had to conservation objectives and conservation management plans where they exist for designated nature conservation sites.

NH P4: Promote increased understanding and awareness of the natural heritage and biodiversity of the county.

NH P5: Recognise that nature conservation is not just confined to designated sites and acknowledge the need to protect non-designated biodiversity, habitats and species not otherwise protected by legislation.

NH P6: Protect and enhance the natural environment of County Carlow and recognise the important role of the natural heritage through its diversity, quality and integrity, in terms of enhancing the image of the County and contributing to quality of life, economic growth, tourism and recreation.

NH P7: Promote development for recreation and educational purposes that does not conflict with maintaining the favourable conservation status of designated natural heritage sites, including the achievement of their conservation objectives.

NH P8: Promote, protect and enhance sustainable and appropriate access to the natural heritage of the county.

NH P9: To promote the carrying out of ecological/habitat assessments to inform the layout and design of development proposals and ensure they integrate the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate.

General Natural Heritage - Objectives

It is an objective of the Council to:

NHO 1: Implement relevant actions from the National Biodiversity Action Plan 2017-2021 (and any superseding plan) and to prepare a County Heritage Plan and Biodiversity Action Plan during the lifetime of this County Development Plan in accordance with RPO 126 in the RSES, to ensure the protection and appreciation of heritage and nature at local level including recognition of rich biodiversity of designation of existing special areas of conservation i.e. Blackstairs Mountains, Slaney River Valley and River Barrow and River Nore SAC.

Natura 2000 Sites - Policies

It is the policy of the Council to:

NS P1: Support the conservation and enhancement of Natura 2000 Sites, and to protect the Natura 2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site, in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines.

NS P2: Screening for Appropriate Assessment and if required Appropriate Assessment is undertaken for all plans to be adopted and projects to be granted permission/authorised by the Council. Where likely significant effects have been identified in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site, either individually or in combination with other plans or projects, ensure appropriate assessment, in accordance with Article 6(3) of the Habitats Directive. The Council shall only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned, unless the plan or project is subject to the provisions of Article 6(4) of the Habitats Directive.

NS P3: Consider impacts within a plan or project's zone of influence, which may include Natura 2000 sites outside the County, when assessing whether a plan or project is likely to have significant effects on Natura 2000 sites.

NS P4: Maintain or restore the favourable conservation status of County's Natura 2000 sites qualifying interest habitats and species.

Natura 2000 Sites - Objectives

It is an objective of the Council to:

NS O1: Strictly protect areas designated or proposed to be designated as Natura 2000 sites, including any areas that may be proposed for designation or designated during the period of this Plan.

Natural Heritage Areas - Policies

It is the policy of the Council to:

NHA P1: Contribute towards the protection, from significant adverse effects, of the ecological integrity and the visual, recreational, environmental and amenity value of the County's proposed Natural Heritage Areas (pNHAs) and associated habitats, including any designated Natural Heritage Areas (NHAs) during the lifetime of this Plan.

NHA P2: Ensure that development proposals within or adjacent to a proposed Natural Heritage Area (pNHA) or Natural Heritage Area (NHA) are designed and sited to minimise significant impacts on the biodiversity (including net loss) and ecological, geological and landscape value of the site, particularly plant and animal species listed under the Wildlife Act 1976 (as amended), the Habitats Directive and the Birds Directive, including their habitats.

NHA P3: Restrict development within a proposed Natural Heritage Area (pNHA) or Natural Heritage Area (NHA) to development that is directly related to the area's amenity potential or development that is required for the conservation management of these sites, subject to the protection and enhancement of natural heritage and visual amenities including biodiversity and landscapes.

NHA P4: To consult with the National Parks and Wildlife Service (NPWS) and other appropriate prescribed bodies when assessing development proposals affecting proposed Natural Heritage Areas (pNHAs) and Natural Heritage Areas (NHA).

Non-designated areas and habitats and species - Policies

It is the policy of the Council to:

ND P1: Conserve the existing flora, fauna and wildlife habitats in the County, including rare and threatened plant, animal and bird species, through the preservation of ecological corridors and ecological networks.

ND P2: Ensure that development does not have a significant adverse effect on rare and threatened species, their breeding places, resting places, habitat or environment, as

applicable, including those protected under the Wildlife Acts 1976 to 2021, the Birds Directive (2009/147/EC), the Habitats Directive (92/43/EEC) and including plant species listed on the Flora (Protection) Order 2015 (S.I. No. 356 of 2015).

- ND P3: Require the submission of an Ecological Impact Assessment, where deemed necessary, for any development proposal likely to have a significant impact on existing flora, fauna and wildlife habitats, including rare and threatened plant, animal and bird species.
- ND P4: Ensure that, where evidence exists of species that are protected under the Wildlife Act 1976 (as amended), the Bird Directive 1979, and the Habitats Directive 1992, appropriate avoidance and mitigation measures are incorporated into development proposals as part of any ecological impact assessment. In the event of a proposed development impact on a site known to be a breeding or resting site of species listed in the Habitats Regulations or the Wildlife Act 1976 (as amended) a derogation licence, issued by the Department of Housing, Local Government and Heritage, may be required.
- ND P5: Consult with the National Parks and Wildlife Service (NPWS) and take account of any licensing requirements when undertaking, approving and authorising development which is likely to affect plant, animal or bird species protected by law.
- ND P6: Ensure that the management of the Council's open spaces and parks is pollinator-friendly and provides more opportunities for biodiversity, supporting the objectives of the National Pollinator Plan 2021-2025. Where it is used, herbicide should be certified and applied as per the manufacturer's instructions.
- ND P7: Support the implementation of the All Ireland Pollinator Plan 2021-2025 and to incorporate actions as appropriate into a Biodiversity Plan for County Carlow providing more opportunities for biodiversity in accordance with RPO 128.
- ND P8: That biodiversity data generated during the lifetime of this Development Plan for the preparation of environmental assessment reports, shall be made available to the National Biodiversity Data Centre (NBDC).

Woodland, Trees and Hedgerows - Policies

It is the policy of the Council to:

- WT P1: Protect and manage existing woodlands, trees and hedgerow which are of amenity or biodiversity value and/or contribute to landscape character and ensure that proper provision is made for their consideration, protection and management when undertaking, approving or authorising development.
- WT P2: Ensure that hedgerow removal to facilitate development is kept to an absolute minimum and, where unavoidable, a requirement for mitigation planting will be

required comprising a hedge of similar length and species composition to the original, established as close as is practicable to the original and where possible linking in to existing adjacent hedges. Native plants of a local provenance should be used for any such planting.

WT P3: Adhere to the provisions of the Wildlife Act 1976 (as amended) in prohibiting the cutting of hedges during the bird nesting season (1st March to 31st August), except in certain legally defined circumstances.

WT P4: Encourage the protection of historic hedgerows or significant hedgerows which serve to link habitat areas to each other and the surrounding countryside.

WT P5: Recognise the biodiversity and archaeological importance of townland boundaries, including hedgerows, and promote their protection and retention.

WT P6: Protect individual or groups of trees which are important for environmental, recreational, historical, biodiversity and/or aesthetic reasons or by reason of contribution to sense of place, and to discourage the felling of mature trees to facilitate development.

WT P7: To contribute towards the protection where possible of the trees which are considered to be an important component of demesne landscapes.

WT P8: Ensure a Tree Management Plan is provided so as existing tree planting is adequately protected during development and incorporated into the layout and design of new developments.

Woodland, Trees and Hedgerows - Objectives

It is an objective of the Council to:

WT O1: Promote the Native Woodland and Neighbourwood schemes and other initiatives that aim to establish and enhance woodlands for recreational and wildlife benefits.

Inland Waters and Riparian Zones - Policies

It is the policy of the Council to:

IW P1: Protect the biodiversity of rivers, streams and other watercourses, to maintain them in an open state, to discourage culverting or realignment, and where possible, uncover existing culverts and restore the watercourses to acceptable ecological standards and for the passage of fish.

- IW P2: Ensure that the County's watercourses are retained for their biodiversity and flood protection values and to conserve and enhance where possible, the wildlife habitats of the County's rivers, streams and riparian zones, including those which occur outside of designated areas, in order to provide a network of habitats and biodiversity corridors throughout the County.
- IW P3: Control the encroachment of development on watercourses and riparian zones and provide for protection measures to watercourses and their banks, including but not limited to: the prevention of pollution of the watercourse, the protection of the river bank from erosion, the retention and/or provision of wildlife corridors and the protection from light spill in sensitive locations, including during construction of permitted development.
- IW P4: Require the submission of an Ecological Impact Assessment, where deemed necessary (and where necessary an Appropriate Assessment where in relation to Natura 2000 sites), including bat and otter surveys, for development proposals along rivers, streams and canal corridors and areas of ecological importance.
- IW P5: Maintain a biodiversity protection (buffer) zone of not less than 10 metres from the top bank of all watercourses in the County, with the full extent of the protection zone to be determined on a case by case basis by the Planning Authority, based on site specific characteristics and sensitivities and consultation with Inland Fisheries Ireland.
- IW P6: Ensure that lighting proposals along water courses, rivers, streams and canal corridors, are not in conflict with bat species, and to ensure that expert advice is sought on such lighting proposals in order to mitigate the impacts of lighting on bats and other species.
- IW P7: Require that runoff from a development area will not result in deterioration of downstream watercourses or habitats, and that pollution generated by a development is treated within the developed area prior to discharge to local watercourses.
- IW P8: Ensure the protection, improvement or restoration of riverine floodplains and to promote strategic measures to accommodate flooding at appropriate locations, to protect ground and surface water quality and build resilience to climate change.
- IW P9: Ensure that development proposals do not adversely affect groundwater resources and groundwater dependent habitats and species.

IW P10: Consult with Inland Fisheries Ireland, as appropriate, in relation to any works or development that could have potential impacts on watercourses, aquatic habitats, species, and associated riparian habitats, and to take full account of any Guidance documents issued by Inland Fisheries Ireland in this regard, including '*Planning for Watercourses in the Urban Environment, A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate/Flood Risk and Recreational Planning*' (2020).

IW P11: Promote the use of watercourses for the pursuit of angling, through working with Inland Fisheries Ireland to improve water quality, to improve fish stocks and to provide safe access to fishing, where appropriate, taking full account of the requirements of the Habitats Directive and other relevant legislation.

IW P12: Promote the natural, historical and amenity value of the County's watercourses, including public access where feasible and appropriate, in partnership with the National Parks and Wildlife Services, Waterways Ireland, Inland Fisheries Ireland, and other relevant stakeholders, while maintaining the watercourses free from inappropriate development.

Wetlands - Policies

It is the policy of the Council to:

WT P1: Protect, manage, and enhance wetlands in the County, and resist development that would remove, fragment, or degrade wetlands.

WT P2: Protect the biodiversity and flood protection value of wetlands and floodplains in the County.

WT P3: Ensure that ecological impact assessment is carried out, where appropriate, for development proposals involving, drainage, reclamation, or infill of wetland areas.

WT P4: To promote voluntary construction of new wet lands where deemed in accordance with proper planning and environmental considerations and where same maybe facilitated by ecological schemes.

Wetlands - Objectives

It is an objective of the Council to:

IW O1: Carry out a Wetlands Survey of the County during the lifetime of this Plan.

Geological Heritage - Policies

It is the policy of the Council to:

GH P1: Protect and enhance the geological and geomorphological heritage of the County.

GH P2: Protect from inappropriate development the list of County Geological Sites (CGS) included in this Plan.

GH P3: Consult with the Geological Survey of Ireland on development proposals which are likely to impact on County Geological Sites or involve significant ground excavations.

Geological Heritage - Objectives

It an objective of the Council to:

GH O1: Protect geological Natural Heritage Areas (NHAs) as they become designated during the lifetime of this Plan.

Invasive Alien Species - Policies

It is the policy of the Council to:

IS P1: Prevent the spread of invasive alien species in the County, and to require landowners and developers to adhere to best practice guidance in relation to the containment and control of invasive alien species, including

- *Invasive Species Ireland guidelines (see)*
- TII (2020) The Management of Invasive Alien Plant Species on National Roads – Standard GE-ENV-01104 <https://www.tiipublications.ie/library/GE-ENV-01104-01.pdf>
- TII (2020) The Management of Invasive Alien Plant Species on National Roads – Technical Guidance <https://www.tiipublications.ie/library/GE-ENV-01105-01.pdf>

IS P2: To require, as appropriate, development proposals to address the presence or absence of invasive alien species, and to require the preparation of an Invasive Species Management Plan for their eradication and/or containment and control where identified on a site or in the vicinity of a site, in accordance with the requirements of the European Communities (Birds and Natural Habitats) Regulations 2011-2015.

IS P3: Prohibit invasive alien plant species from inclusion in landscape design proposals and to require the use of native local plant species.

Invasive Alien Species - Objectives

It an objective of the Council to:

- IS O1: Prepare an Invasive Alien Species Management Strategy, in conjunction with a Hedge and Road Verge Maintenance Strategy, during the lifetime of this Plan.
- IS O2: To raise awareness of the potential threat of invasive alien species in the County, and to inform the public of appropriate management measures for the prevention, containment, and control of invasive alien species.
- IS O3: Undertake a programme of mapping of invasive alien species in the County and initiate control programs with relevant stakeholders and landowners on the prevention, containment and control of invasive alien species.

Water Quality- Policies

It is the policy of the Council to:

- WQ P1: Support the implementation of the relevant recommendations and measures as outlined in the River Basin Management Plan 2018-2021, and any associated Programme of Measures, or any such plan that may supersede same during the lifetime of this Plan. Development proposals shall not have an unacceptable impact on the water environment, including headwaters, surface waters, groundwater quality and quantity, river corridors and associated habitats. The Council will support the application and implementation of a catchment planning and management approach to development and conservation. Site specific assessments to determine localised pressures / impacts may be required as part of the development management process.
- WQ P2: Promote and comply with the environmental standards and objectives established for (i) bodies of surface water, by the European Communities (Surface Water) Regulations 2009 and (ii) groundwater, by the European Communities (Groundwater) Regulations 2010 or as may be amended during the period of this Plan.
- WQ P3: Ensure that the Water Framework Directive, the River Basin Management Plan and any subsequent Water Management Plans or statutory guidance are fully considered throughout the planning process.
- WQ P4: Encourage the use of catchment sensitive farming practices in order to meet Water Framework Directive targets and comply with the RBMP.

Water Quality- Objectives

It is an objective of the Council to:

WQ O1: Ensure through the implementation of the River Basin Management Plan, and any associated legislation, the protection and improvement of all drinking water, surface water and ground waters throughout the County.

WQ O2: Work with the Local Authority Waters Programme and other relevant State agencies to develop and implement the River Basin Management Plan 2018-2021, and any updates subject to compliance with the Habitats Directive.

WQ O3: Implement the Blue Dot Catchment network programme under the RBMP to protect and maintain the excellent 'High' status water bodies.

WQ P4: Promote and support locally led community initiatives aimed at improving local water quality standards subject to compliance with the Habitats Directive.