

12

Biodiversity & Green Infrastructure



Chapter 12 Biodiversity and Green Infrastructure

***Aim:** To protect, manage and enhance the County's biodiversity for future generations, including sites designated at national and EU level, protected species and habitats outside of designated sites and to promote the development of an integrated Green Infrastructure network in order to improve our resilience to climate change and to enable the role of Green Infrastructure in delivering sustainable communities.*

12.1 Biodiversity

Biodiversity or biological diversity refers to the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (Convention on Biological Diversity, 1993).

12.2 Biodiversity and Ecosystem Services

Biodiversity has intrinsic value, with each species having a value and a right to exist. It is important because all of life is interconnected and functions as part of a complex ecosystem, with a multitude of inter-dependencies required for species survival and well-being. The health of the planet depends on the health of our biodiversity and humans rely on biodiversity for food, clean air and water, healthy soils, clothing and building materials, as well as for medicines and places in which to unwind and reconnect with nature. Biodiversity underpins important economic sectors such as agriculture and tourism and provides many other benefits (ecosystem services) free of charge which can be grouped into four main categories:

- provisioning services—the production of food, fibre, and water
- regulating services—the control of climate and diseases
- supporting services—nutrient cycling and crop pollination
- cultural services—such as spiritual and recreational benefits.

In 2008 an Irish study 'The Economic and Social Benefits of Biodiversity', highlighted that the value of our national ecosystem services, in terms of their productive output and human utility, was estimated at over €2.6 billion per year.

The State of the Environment Report (EPA 2020), *an Integrated Assessment of the State of Ireland's Environment*, demonstrates that for biodiversity and the natural environment a deteriorating trend dominates, especially for EU protected habitats, with 85% of EU protected habitats having an unfavourable status. The picture for EU protected species is mixed, but 15% are in decline, with freshwater species most at risk. Threats to biodiversity and the natural environment comes from a range of development pressures, population growth agricultural intensification, exploitation of resources, land management practices and climate change.

A Climate Change and Biodiversity Loss Emergency was declared by the Irish Government in May 2019 following publication of a report by the Intergovernmental Panel on Biodiversity and Ecosystem Service on the state of the world's biodiversity and ecosystem services. Kildare County Council declared a Climate Change and Biodiversity Loss Emergency in June 2019.

The Council recognises the important role of the environment through diversity, quality, integrity, and quality of life by promoting the protection, conservation, and enhancement of the natural environment as an integral part of all development.

12.3 Legislative Context

Ireland has signed and ratified several international conventions and agreements including the Convention on Biological Diversity, the Convention on the Conservation of European Wildlife and Natural Habitats (Bern) and the Convention on Wetlands of International Importance (Ramsar). These various obligations are given legal effect through both European and National legislation and have resulted in the designation of natural heritage sites throughout the country.

12.3.1 EU Habitats Directive

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats (Annex I) and species (II) that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A Special Area of Conservation or SAC is a designation under the Habitats Directive. The Habitats Directive sets out the protocol for the protection and management of SACs.

12.3.2 EU Birds Directive

The Birds Directive (Council Directive 79/409/EEC and Council Directive 2009/147/EC on the Conservation of Wild Birds) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas. This directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection (Annex I species). Appendix I indicates Annex I bird species as listed on the Birds Directive. A Special Protection Area or SPA is a designation under The Birds Directive.

12.3.3 Appropriate Assessment

A Planning Authority must have regard to any European Site when considering any plan or project or making a decision in relation to a plan or project. Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment (AA). This requirement is implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011) and the Planning and Development Act 2000, as amended. The Government published Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities in December 2009 (revised in February 2010).

12.3.4 The Wildlife Acts 1976 – 2021

The primary domestic legislation providing for the protection of wildlife in general, and the control of some activities adversely impacting upon wildlife is the Wildlife Act of 1976. The aims of the Wildlife Act according to the National Parks and Wildlife Service are “... to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims.” All bird species are protected under the Act. The Wildlife (Amendment) Act of 2000 amended the original Act to improve the effectiveness of the Act to achieve its aims.

12.3.5 Flora (Protection) Order, 2015

Sets out the current list of plant species protected by Section 21 of the Wildlife Act, 1976, as amended. It is illegal to cut, uproot or damage the listed species in any way, or to offer them for sale. This prohibition extends to the taking or sale of seed. In addition, it is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation.

12.4 International Policy Context

12.4.1 EU Biodiversity Strategy for 2030

On 20 May 2020, the Commission adopted an EU Biodiversity Strategy for 2030 (European Commission, 2020). The strategy presents an ambitious agenda to arrest the trend in biodiversity loss with increasing emphasis on ecosystem restoration and transformative change. Ecosystems are solutions, not only to protect biodiversity but also to enhance carbon uptake and contribute to climate change mitigation as well as to deliver essential benefits to people, agriculture, and the economy. The benefits derived from biodiversity are commonly referred to as Ecosystem Services. These ecosystem services are increasingly recognised as being integral to planning and land use policies.

The strategy contains specific commitments and actions to be delivered by 2030:

- Establishing a larger EU-wide network of protected areas on land and at sea (30%);
- Launching an EU nature restoration plan;
- Introducing measures to enable the necessary transformative change;
- Introducing measures to tackle the global biodiversity challenge;
- Better respecting nature in public and business decision-making;
- Ensuring better implementation and tracking of progress; and
- Improving knowledge, financing, and investments.

12.4.2 The Aarhus Convention

Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters, 1998 (The Aarhus Convention) lays down a set of basic roles to promote citizens involvement in environmental matters and improve enforcement of Environmental Law; its provisions are broken down into three Pillars: Access to information, Public Participation in environmental decision making and Access to Justice. Same has given rise to the European Directive 2003/4/EC on Public Participation, both of which have been transposed into Irish Law. Ireland ratified the Convention on 20th June 2012.

12.4.3 2030 Agenda for Sustainable Development (2015)

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, sets out an ambitious framework of universal and indivisible goals and targets to address a range of global societal challenges. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership, see Figure 12.1.

Sustainable Development Goal 15 of the 2030 Agenda for Sustainable Development is devoted to 'protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss'.

Biodiversity and ecosystems feature prominently across many of the Sustainable Development Goals (SDGs) and associated targets. They contribute directly to human well-being and development priorities. Biodiversity is at the centre of many economic activities, particularly those related to crop and livestock agriculture, forestry, and fisheries. Globally, nearly half of the human population is directly dependent on natural resources for its livelihood, and many of the most vulnerable people depend directly on biodiversity to fulfil their daily subsistence needs.



Figure 12.1 - The 17 Sustainable Development Goals (SDGs)

12.4.4 Convention on Biological Diversity (1992)- UN Decade on Ecosystem Restoration

Ireland is a signatory to the UN Convention on Biological Diversity (CBD); the Cancun Declaration (CBD, 2016), which focuses on the need for governments at the national, sub-national and local levels to mainstream the conservation and sustainable use of biodiversity for human well-being. All parties to the Convention are required to prepare national biodiversity strategies and action plans.

The United Nations General Assembly has proclaimed the UN Decade on Ecosystem Restoration in June 2021. This declaration aims to halt the degradation of ecosystems and restore them to achieve global goals. Led by the United Nations Environment Programme (UNEP) and the Food and Agriculture Organization of the United Nations (FAO).

12.5 National Policy Context

12.5.1 National Biodiversity Action Plan (NBAP) 2017 - 2021

The National Biodiversity Action Plan 2017-2021 (NBAP) captures the objectives, targets and actions for biodiversity that will be undertaken by a wide range of government, civil society, and private sectors to achieve Ireland's Vision for Biodiversity, reflecting Objective 1 of the NBAP which is to 'Mainstream biodiversity into decision making across all sectors.

12.5.2 Eastern and Midlands Regional Spatial and Economic Strategy 2019-2031

The RSES acknowledges that the condition and conservation of our natural and semi-natural habitats impacts on the quality of life of residents and visitors to the Region, as well as making significant contributions to the economy and agriculture (ecosystem services). The strategy identifies the potential environmental impacts of spatial planning policy on habitats and species and promotes an Ecosystem Services Approach in the preparation of statutory land use plans. The strategy acknowledges the importance of identifying, protecting and enhancing Green Infrastructure (GI) as a core element of land use planning and considers that GI offers an opportunity to develop integrated strategies around economic development, urban placemaking and rural policy.

12.5.3 County Kildare Biodiversity Action Plan 2009-2014

The Council adopted its first Biodiversity Action Plan in April 2009 which provides a framework for conserving biodiversity and natural heritage at a local level. It complements the Kildare Heritage Plan by including detailed actions to deliver positive outcomes focused on species and habitats. A key focus of the plan is gathering information on and managing the biodiversity resource, education, awareness raising and the promotion of effective cooperation between stakeholders. The County Kildare Biodiversity Action Plan will be reviewed in the short term during the lifetime of this plan.

Policy

It is the policy of the Council to:

BI P1	Integrate in the development management process the protection and enhancement of biodiversity and landscape features by applying the mitigation hierarchy to potential adverse impacts on important ecological features (whether designated or not), i.e. avoiding impacts where possible, minimising adverse impacts, and if significant effects are unavoidable by including mitigation and/or compensation measures, as appropriate. Opportunities for biodiversity net gain are encouraged.
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Objectives

It is an objective of the Council to:

BI O1	Require, as part of the Development Management Process, the preparation of Ecological Impact Assessments that adequately assess the biodiversity resource within proposed development sites, to avoid habitat loss and fragmentation and to integrate this biodiversity resource into the design and layout of new development and to increase biodiversity within the proposed development. Such assessments shall be carried out in line with the CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.
BI O2	Require, wherever possible, the retention and creation of green corridors within and between built up urban areas and industrial scale developments to protect wildlife habitat value including areas that are not subject to public access.
BI O3	Actively support the implementation of national biodiversity initiatives such as the All-Ireland Pollinator Plan 2021-2026
BI O4	Promote increased public participation in biodiversity conservation by supporting and encouraging community-led initiatives such as native tree planting, the removal of invasive species and the continued preparation of Local Biodiversity Actions Plans for settlements in County Kildare ¹ .
BI O5	Move towards no net loss of biodiversity through strategies, plan, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure.
BI O6	Apply the precautionary principle in relation to proposed developments in environmentally sensitive areas to ensure that all potential adverse impacts on a designated NHA or Natura 2000 Site arising from any proposed development or land use activity are avoided, remedied, or mitigated.
BI O7	Pursue insofar as possible and practical, a policy of biodiversity net gain through strategies, plans, developments, mitigation measures, appropriate offsetting and/or investment in Blue-Green infrastructure.

¹ LBAPS prepared Allenwood, Ballitore, Ballymore Eustace, Carbury, Celbridge, Clane, Kilcullen, Kill, Leixlip, Maynooth, Monasterevin, Newbridge, (a further 10 will be prepared in 2022).

Actions

It is an action of the Council to:

BI A1	Continue to implement natural heritage actions in the County Heritage Plan 2019-2025, the County Biodiversity Plan, the National Biodiversity Action Plan 2017 – 2021 and any subsequent plans, in partnership with the Department of Housing, Local Government and Heritage, relevant stakeholders and the community.
BI A2	Carry out habitat mapping on a phased basis and integrate biodiversity considerations and protection measures into the suite of mandatory Local Area Plans and to develop specific policies and objectives that could be incorporated into council programmes and activities.
BI A3	Review the County Kildare Biodiversity Action Plan in the short term during the lifetime of this Plan and leverage appropriate funding to establish a Biodiversity Officer for Kildare County Council.
BI A4	Continue to prepare and roll-out Local Biodiversity Action Plans on an annual basis, in partnership, where appropriate with LEADER, subject to funding.
BI A5	Engage with Residents Associations to educate and encourage the roll out of the Pollinator and Biodiversity Plans, specifically working towards less spraying and more pollinator friendly practices.
BI A6	Collate and publish a list of County Biodiversity Sites as part of the review of the County Biodiversity Action Plan.

12.6 Designated sites for nature conservation

12.6.1 Natura 2000 network

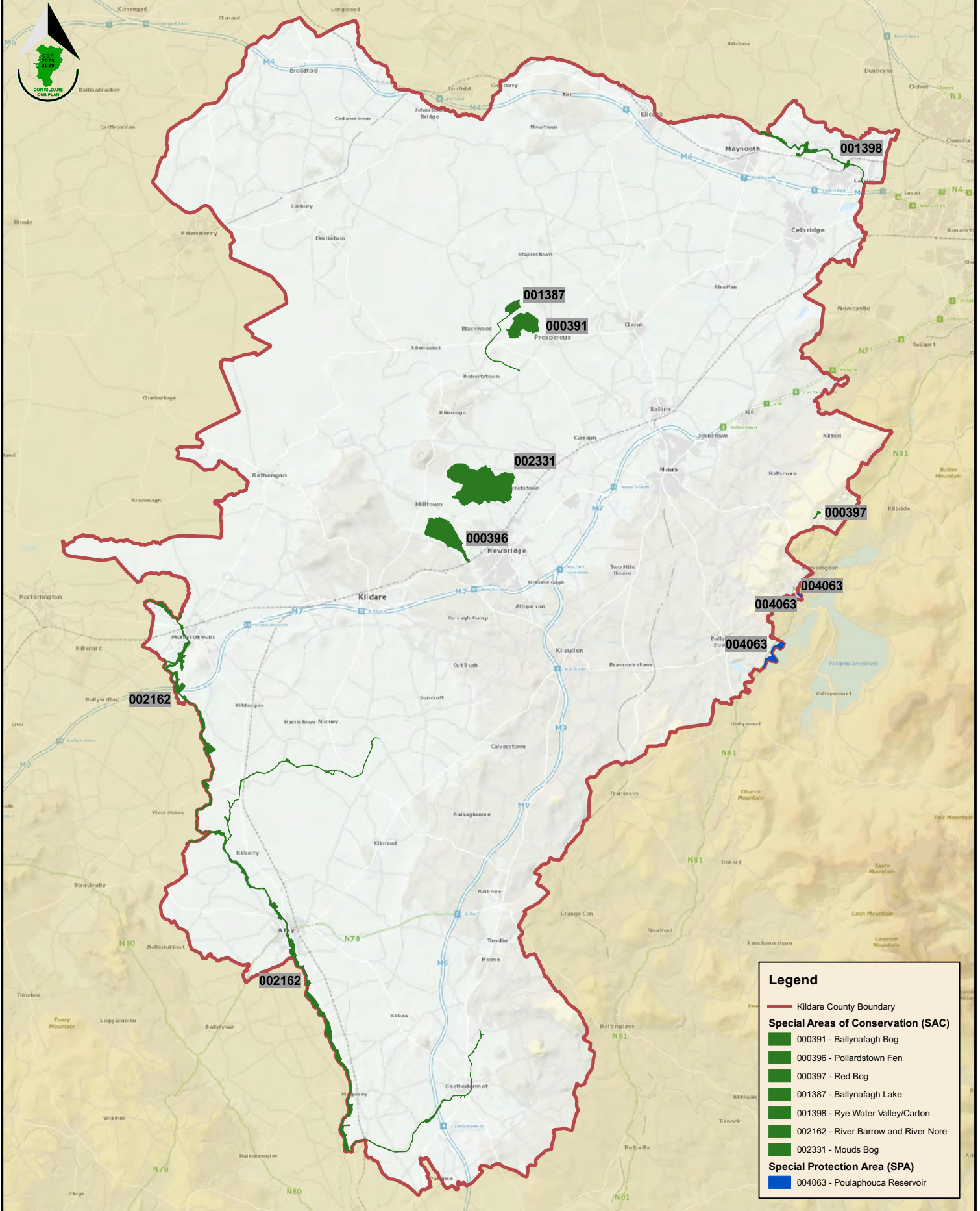
The EU Birds Directive (Council Directive 79/409/ EEC) and the EU Habitats Directive (European Directive 92/43/EEC) provides for the establishment of the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. The Natura 2000 network of European sites comprises Special Areas of Conservation (SAC), and Special Protection Areas (SPA). There are 8 Natura 2000 sites within the county, see Table 12.1 and Map V1 - 12.1 below.

Site Name	Site Code	European Designation	Qualifying Interests
Pollardstown Fen	000396	SAC	<ul style="list-style-type: none"> • Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> • Petrifying springs with tufa formation (<i>Cratoneurion</i>) • Alkaline fens • <i>Vertigo geyeri</i> (Geyer's Whorl Snail) • <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail)

Site Name	Site Code	European Designation	Qualifying Interests
Ballynafagh Bog	000391	SAC	<ul style="list-style-type: none"> • Active raised bogs • Degraded raised bogs still capable of natural regeneration. • Depressions on peat substrates of the Rhynchosporion
Ballynafagh Lake	001387	SAC	<ul style="list-style-type: none"> • Alkaline fens • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail)
Rye Water Valley at Carton	001398	SAC	<ul style="list-style-type: none"> • Petrifying springs with tufa formation (Cratoneurion) • <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail)
Mouds Bog	002331	SAC	<ul style="list-style-type: none"> • Active raised bogs • Degraded raised bogs still capable of natural regeneration. • Depressions on peat substrates of the Rhynchosporion
River Barrow and Nore	002162	SAC	<ul style="list-style-type: none"> • Estuaries • Mudflats and sandflats not covered by seawater at low tide. • Reefs • <i>Salicornia</i> and other annuals colonising mud and sand. • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation • European dry heaths • Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels • Petrifying springs with tufa formation (Cratoneurion) • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel)

Site Name	Site Code	European Designation	Qualifying Interests
			<ul style="list-style-type: none"> • Austropotamobius pallipes (White-clawed Crayfish) • Petromyzon marinus (Sea Lamprey) • Lampetra planeri (Brook Lamprey) • Lampetra fluviatilis (River Lamprey) • Alosa fallax fallax (Twaite Shad) • Salmo salar (Salmon) • Lutra lutra (Otter) • Trichomanes speciosum (Killarney Fern) • Margaritifera durrovensis (Nore Pearl Mussel)
Red Bog	000397	SAC	<ul style="list-style-type: none"> • Transition mires and quaking bogs
Poulaphouca Reservoir	004063	SPA	<ul style="list-style-type: none"> • Greylag Goose (Anser anser)

Table 12.1 - Natura 2000 Sites in Co Kildare



Legend

- Kildare County Boundary
- Special Areas of Conservation (SAC)**
- 000391 - Ballynafagh Bog
- 000396 - Pollardstown Fen
- 000397 - Red Bog
- 001387 - Ballynafagh Lake
- 001398 - Rye Water Valley/Carton
- 002162 - River Barrow and River Nore
- 002331 - Mouls Bog
- Special Protection Area (SPA)**
- 004063 - Poulaphouca Reservoir

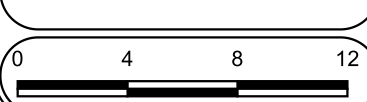
Kildare County Council
 Planning & Strategic
 Development Department
 Aras Chill Dara,
 Devoy Park, Naas, Co Kildare.

County Development Plan 2023-2029

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

Scale: N.T.S. Map Ref: V1-12.1

 Date: January 2023 Drawing No.: 200/22/1353



Special Areas of Conservation and Special Protection Areas

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Drawn By: M O'Loughlin Checked By: L Crawford Approved By: C O'Donnell
 Date 28/01/2023 Date 28/01/2023 Date 28/01/2023

**This drawing is to be read in conjunction
with the written statement**

Policy

It is the policy of the Council to:

BI P2	Seek to contribute to maintaining or restoring the conservation status of all sites designated for nature conservation or proposed for designation in accordance with European and national legislation and agreements. These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), Ramsar Sites and Statutory Nature Reserves.
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Objectives

It is an objective of the Council to:

BI O8	Support the implementation of the National Raised Bog Special Areas of Conservation Management Plan 2017-2022.
BI O9	Avoid development that would adversely affect the integrity of any Natura 2000 site and promote favourable conservation status of habitats and protected species including those listed under the Birds Directive, the Wildlife Acts and the Habitats Directive, to support the conservation and enhancement of Natura 2000 Sites including any additional sites that may be proposed for designation during the period of this Plan and 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.
BI O10	Ensure an Appropriate Assessment Screening, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive, Section 177A of the Planning and Development Act (2001-2022) or any superseding legislation and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest.
BI O11	Support the establishment of conservation measures and the preparation and implementation of management plans for the conservation of Natura 2000 sites by NPWS, as required by Article 6(1) of the Habitats Directive.

Action

It is an action of the Council to:

BI A7	Identify and provide appropriate buffer zones between Designated Sites and areas zoned for development.
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12.6.2 Natural Heritage Areas (NHAs) and Nature Reserves

Under the Wildlife (Amendment) Act 2000, Natural Heritage Areas (NHAs) are designated to conserve species and habitats of national importance and sites of geological interest. The designation of these sites is the responsibility of the National Parks and Wildlife Service of the Department of Housing, Local Government and Heritage and is an ongoing process as boundaries are revised and adjusted and new sites added.

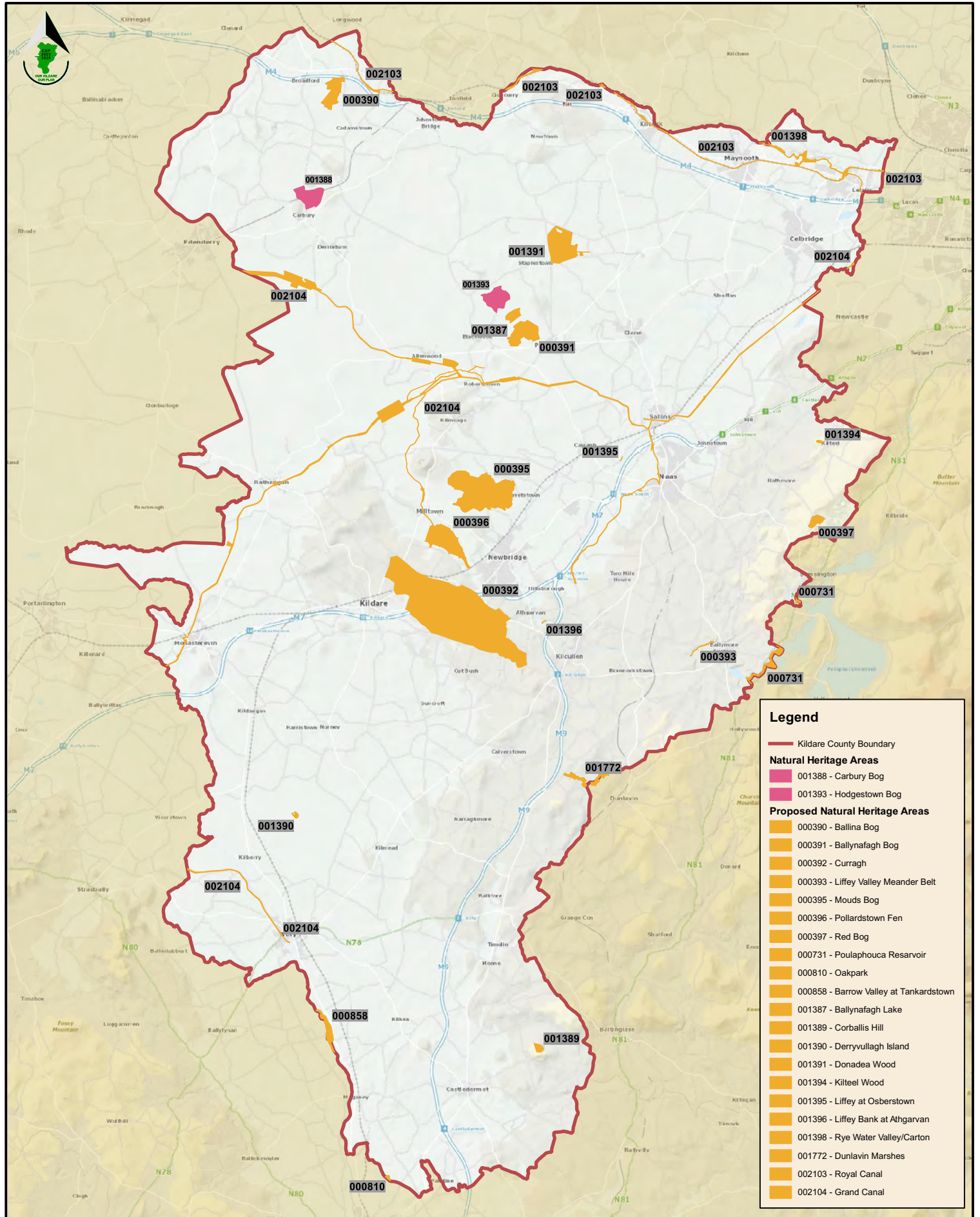
A nature reserve is an area of importance to wildlife, which is protected under Ministerial Order under Irish Legislation. Biogenetic Reserves, as designated by the Council of Europe, are protected areas characterised by one or more typical, unique, endangered or rare habitats, biocenoses or ecosystems.

Pollardstown Fen is designated as a nature reserve and as a Biogenic Reserve.

There are 23 designated or proposed Natural Heritage Areas (NHAs), within the county, see Table 12.2 and Map V1 - 12.2 below.

Site Name	Site Number
Carbury Bog	001388
Hodgestown Bog	001393
Ballina Bog	000390
Corballis Hill	001389
Curragh	000392
Derryvullagh Island	001390
Donadea Wood	001391
Dunlavin Marshes	001772
Grand Canal	002104
Kilteel Wood	001394
Liffey at Osberstown	001395
Liffey Bank at Athgarvan	001396
Liffey Valley Meander Belt	000393
Mouds Bog	000395
Oakpark	000810
Pollardstown Fen	000396
Poulaphouca Reservoir	000731
Red Bog	000397
Royal Canal	002103
Ballynafagh Bog	000391
Ballynafagh Lake	001387
Barrow Valley at Tankardstown	000858
Rye Water Valley /Carton	001398

Table 12.2 - Natural Heritage Areas in Co. Kildare



- Legend**
- Kildare County Boundary
 - Natural Heritage Areas**
 - 001388 - Carbury Bog
 - 001393 - Hodgestown Bog
 - Proposed Natural Heritage Areas**
 - 000390 - Ballina Bog
 - 000391 - Ballynafagh Bog
 - 000392 - Curragh
 - 000393 - Liffey Valley Meander Belt
 - 000395 - Mouds Bog
 - 000396 - Pollardstown Fen
 - 000397 - Red Bog
 - 000731 - Poulaphouca Reservoir
 - 000810 - Oakpark
 - 000858 - Barrow Valley at Tankardstown
 - 001387 - Ballynafagh Lake
 - 001389 - Corballis Hill
 - 001390 - Derryvullagh Island
 - 001391 - Donadea Wood
 - 001394 - Kiltel Wood
 - 001395 - Liffey at Osberstown
 - 001396 - Liffey Bank at Athgarvan
 - 001398 - Rye Water Valley/Carton
 - 001772 - Dunlavin Marshes
 - 002103 - Royal Canal
 - 002104 - Grand Canal

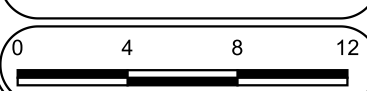
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County Development Plan 2023-2029

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

Scale: N.T.S. Map Ref: V1-12.2

Date: January 2023 Drawing No.: 200/22/1353



Natural Heritage Areas 392

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Policy

It is the policy of the Council to:

BI P3	Ensure that any proposal for development within or adjacent to a Natural Heritage Area (NHA), Ramsar Sites and Nature Reserves is designed and sited to minimise its impact on the biodiversity, ecological, geological and landscape value of the site, particularly plant and animal species listed under the Wildlife Acts and the Habitats and Birds Directive including their habitats.
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Objectives

It is an objective of the Council to:

BI O12	Require the preparation of an Ecological Impact Assessment (EclA) by a suitably qualified professional for proposals for development within or adjacent to a Natural Heritage Area (NHA)/proposed Natural Heritage Areas (pNHA), to ensure the development is designed and sited to minimise its impact on the biodiversity, ecological, geological and landscape value of the site, particularly plant and animal species listed under the Wildlife Acts. Such assessments shall be carried out in line with the CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.
BI O13	Support the establishment of conservation measures and preparation and implementation of management plans for the conservation of NHA sites by NPWS.
BI O14	Conserve, preserve and protect the integrity of and maintain the favourable conservation value/status within or adjacent to Ramsar Sites, Statutory Nature Reserves, Biogenetic Reserves, Wildfowl Sanctuaries, all existing and proposed NHAs. They should be designed and sited so as to minimise their impact on the ecological and landscape values of these sites under National and European legislation and International Agreements.

Action

It is an action of the Council to:

BI A8	Work with the National Parks and Wildlife Service to identify an appropriate buffer surrounding Pollardstown Fen, based on best available scientific information, in order to protect the ecological integrity of the Fen as a pNHA and SAC and to prevent urban encroachment and environmental degradation of the site in order to support the qualifying interests of the site.
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12.7 Protected Habitats and species outside Designated Areas

County Kildare supports a range of plant, animal and bird species which are deemed to be rare and threatened under European and Irish legislation and which are known to exist outside of designated sites such as Natura 2000 sites or Natural Heritage Areas. This includes nationally rare plants, plants listed in the Red Data Lists of Irish Plants, Flora (Protection) Order of 2015 (or other such Orders) and their habitats and animals, and birds listed in the Wildlife Acts of 1976-2012 and subsequent statutory instruments.

Article 10 of the EU Habitats Directive states that Member States shall endeavour in their land use planning and development policies, to encourage the management of features of the landscape, which are of major importance for wild flora and fauna. Such features are those which by virtue of their linear and continuous structures such as rivers and riverbanks or hedgerows or by virtue of their functions as “stepping-stones” such as ponds or small woods are essential for the migration, dispersal and genetic exchange of wild species.

12.7.1 Protected Habitats and Species

Policy

It is the policy of the Council to:

BI P4	Ensure that any new development proposal does not have a significant adverse impact, incapable of satisfactory mitigation on plant, animal or bird species which are protected by law.
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Objectives

It is an objective of the Council to:

BI O15	Ensure that any new development proposal does not have a significant adverse impact on rare and threatened species, including those protected under the Wildlife Acts 1976 and 2012, the Birds Directive 1979 the Habitats Directive 1992 and the Flora Protection Order species and any species listed under the national red lists or that could be listed on a national red list.
BI O16	Ensure appropriate species and habitat avoidance and mitigation measures are incorporated into all new development proposals.
BI O17	Require a derogation licence, where necessary, issued by the DHLGH, in the event of a proposed development impacting on a site known to be a breeding or resting site of species listed in the Habitats Directive (Annex IV species).
BI O18	Require all applications for new developments to identify, protect and sensitively enhance the most important ecological features and habitats, and incorporate these into the overall open space network, keeping free from development and to provide links to the wider Green Infrastructure network as an essential part of the design process and by making

	provision for local biodiversity (e.g. through provision of swift boxes or towers, bat roost sites, hedgehog highways ² , green roofs, etc.).
BI O19	Require that all biodiversity data gathered in the preparation of planning applications will be made available to the National Biodiversity Data Centre (NDBC).
BI O20	Conserve and protect habitats and species listed in the Annexes of the EU Habitats Directive (92/43/EEC) (as amended), the Birds Directive (2009/147/EC), Directive Annex 2, the Wildlife Acts 1976 to 2000, The Wildlife Acts 1976 (as amended) and the Flora Protection Order No 94 of 1999.
BI O21	Work with bodies such as the NPWS and National Biodiversity Data Centre to ensure that species for which Kildare is a national stronghold such as Green-Flowered Helleborine Orchid, Yellowhammer and Linnet, which are nationally rare or declining, are supported to flourish and seek to ensure the habitat conditions favourable to such species are retained in the county.
BI O22	Identify and protect areas of high nature conservation value (including but not limited to SAC/SPA/pNHA) and support the landscape features which act as ecological corridors/networks and stepping-stones, such as river corridors, hedgerows, and road verges so as to minimise the loss of habitats and features of the wider countryside which are of major importance for wild fauna and flora in accordance with Article 10 of the Habitats Directive.

Action

It is an action of the Council to:

BI A9	Undertake surveys and collect data to provide an evidence-base to assist the Council in meeting its obligations under Article 6 of the Habitats Directives (92/43/EEC) as transposed into Irish Law, subject to available resources.
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12.8 County Biodiversity Sites

County Kildare includes a number of sites of biodiversity value that meet the criteria for designation at an international or national level that are not designated sites. However, these sites are of immense importance at a regional, county and local level. To date, they have not been fully surveyed or recognised as such. In order to inform this process, the County Council has commissioned – and continues to commission – surveys of habitats such as hedgerows, wetlands and unimproved grassland.

² <https://www.hedgehogstreet.org/>

12.8.1 County Biodiversity Sites

Policy

It is the policy of the Council to:

BI P5	Identify and conserve locally important biodiversity sites in the county which contribute to the overall ecological network of County Kildare.
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Objectives

It is an objective of the Council to:

BI O23	Protect, in co-operation with the relevant statutory agencies and other relevant groups, sites of local biodiversity importance (County Biodiversity Sites), not otherwise protected by legislation.
BI O24	Identify biodiversity corridors, watercourses, significant as well as native and indigenous hedgerows, or marginal habitat, between County Biodiversity Sites in order to appropriately landscape same in order to ensure population recovery and survival, abundance, productivity, genetic diversity and species richness.
BI O25	Support the designation of County Biodiversity Sites, as NHAs or SACs where appropriate.

Actions

It is an action of the Council to:

BI A10	Identify and map County Biodiversity Sites in cooperation with the relevant statutory agencies, other relevant groups and the general public, not otherwise protected by legislation and to identify specific peatland areas of biodiversity interest for protection, including legal protection where mechanisms are available (including but not limited to Lullymore/Allen/Lodge Bog, Harristown/Dunshane Common, Kingsbog Common, and Suncroft Common).
BI A11	Develop Management Plans for County Biodiversity Sites where appropriate.
BI A12	Support the development, where appropriate and feasible, of biodiversity awareness signage in the county.
BI A13	Work with Teagasc and landowners throughout the county in order to identify suitable, appropriately designed 'Hare's Corner' projects which would create pocket sized habitats that are linked with compatible habitats in the wider landscape in order to enhance biodiversity.

12.9 Trees, Woodlands and Hedgerows

12.9.1 Hedgerows

County Kildare's hedgerow network is a huge asset to the county, being valuable in terms of agriculture, landscape, wild flora and fauna, water quality, carbon sequestration and employment. Hedgerows are also a valuable component of Ireland's cultural and natural heritage. Most Irish hedgerows were planted during the 18th and 19th centuries, following Acts of Parliament obliging landowners to erect permanent boundaries between their properties. Hedgerows along townland boundaries often date from medieval times or even earlier, with some boundaries dating back to the Bronze Age bank-and-ditch enclosures. Older hedges made up of native trees and shrubs, tend to have greater value in wildlife and heritage terms, having larger banks and ditches and being richer in species diversity.

A survey of Kildare hedgerows was conducted in 2006 (Foulkes, 2006) where the total length of hedgerow in County Kildare was estimated at 10,305km. The average figure for hedgerow density as 5.92 km/km². It is estimated that 1.2% of the county was covered in hedgerows in 2006. County Kildare's hedgerows show a higher degree of fragmentation than those of other counties, largely due to the high degree of development in rural areas. This coupled with the fact that two thirds of hedges adjoin intensively managed farmland, means that there are implications for the overall biodiversity potential of the resource on farmland without extended field margins. Since the publication of the survey in 2006 Kildare's hedgerows have further deteriorated due to removal for development, over-management, and under-management.

Trees, woodlands and hedgerows make a valuable contribution to the landscape and visual amenity of County Kildare and provide wider environmental benefits that include carbon storage. Forests are acknowledged as important habitats for wildlife and Coillte's forests play a key role in biodiversity protection and enhancement in County Kildare. Trees, either individually, as specimen trees, or in groups, also make an important contribution to the landscape of many of the country house demesnes throughout the county. Trees, woodlands and hedgerows perform many functions such as shelter from wind, act as a natural barrier, absorb pollutants and provide a biodiversity function in terms of provision of habitat and food sources and are important producers of oxygen and act as carbon sinks.

In urban settings trees or groups of trees can contribute significantly to the local landscape or townscape and to the successful integration of new buildings into the landscape. The planting or retention of mature trees and hedgerows can contribute to amenity and more attractive developments as well as providing important wildlife habitats. The retention of trees should be considered at the earliest possible design stage in any new or redevelopment proposal.

Under Section 37 of the Forestry Act 1946, as amended, with certain exceptions, it is illegal to uproot a tree over ten years of age or cut down a tree of any age unless notice of intention to do so has been given in accordance with the Forestry Act. Except for an area located within the boundaries of a town or borough council area, a tree felling licence from the Forest Service of the Department of Agriculture, Food and the

Marine is required if it is proposed to fell trees.

The 2008 NPWS Native Woodlands Survey reports that there are 4,970 ha of native woodland in Kildare, representing 2.93% of the county land cover. The Tree Register of Ireland maintains a register of champion trees and lists 57 champion trees for County Kildare by virtue of their age, height and girth. Many of these trees are found within demesne landscapes which covered a significant area of land cover in the county in the past.

When planting hedgerows, species indigenous to the area should be used. The County Kildare Hedgerow Survey (2006) identified the predominant hedgerow species in Kildare. These species are listed in Section 15.2.5, Chapter 15, Development Management Standards.

12.9.2 Tree Preservation Orders

The local Government (Planning & Development) Act 1963 provides for the making of Tree Preservation Orders (TPOs) by the Planning Authority where it is considered desirable to preserve trees on amenity grounds. This Act was amended by the 1976 Planning Act, Section 14, which was amended by the 1992 Planning Act, Section 20 which was further amended by the 2000 Planning Act which outlined the legal framework and procedures in relation to the making of a TPO. TPOs prevent the cutting down, topping, lopping or willful destruction of trees without the specific consent of the Planning Authority. Such TPOs do not apply to the cutting of trees which are dead or dying or have become dangerous, or to the cutting of trees in compliance with statutory obligations to prevent or abate nuisance. There are a number of existing Tree Preservation Orders in the county (See Table 12.3). The Tree Preservation Guidelines (1994) which outline the means by which the Development Plan can assist the Planning Authority in achieving the preservation and enhancement of the amenity value of trees has also informed this section of the Plan.

Location	TPO reference	Map reference (OS map No)
Clane	1987/1	OS 6"14
Ballymore Eustace	1991/1	OS 6"29
Clogheen (Moore Abbey)	1988/1	OS 6"28
Clongowes	1987/1	OS 6" 14

Table 12.3 - Tree Preservation Orders in Co. Kildare

Policy

It is the policy of the Council to:

BI P6	Recognise the important contribution trees and hedgerows make to the county biodiversity resource climate mitigation, resilience and adaptation.
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Objectives

It is an objective of the Council to:

BI O26	Prevent, in the first instance, the removal of hedgerows to facilitate development. Where their removal is unavoidable, same must be clearly and satisfactorily demonstrated to the Planning Authority. In any event, removal shall be kept to an absolute minimum and there shall be a requirement for mitigation planting 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 to existing adjacent hedges. Ideally, native plants of a local provenance and origin should be used for any such planting. Removal of hedgerows and trees prior to submitting a planning application will be viewed negatively by the planning authority and may result in an outright refusal.
BI O27	Require the retention and appropriate management of hedgerows and to require infill or suitably sized transplanted planting where possible in order to ensure an uninterrupted green infrastructure network.
BI O28	Promote the integration of boundary hedges within and along development sites into development design so as to avoid “trapped hedges” located to the boundary of houses within the development layout. Encourage the planting of woodlands, trees and hedgerows as part of new developments and as part of the Council’s own landscaping works ideally using native plants of local provenance and origin.
BI O29	Require the undertaking of a comprehensive tree survey carried out by a suitably qualified arborist where development proposals require felling of mature trees; the tree survey shall assess the condition, ecological and amenity value of the tree stock proposed for removal as well as mitigation planting and a management scheme. It should be noted that rotting and decaying trees are an integral part of a woodland ecosystem and can host a range of fungi and invertebrates, important for biodiversity. While single or avenue trees that are decaying may be removed, others that are part of group or cluster may be subject to retention.
BI O30	Ensure a Tree Management Plan is provided to ensure that trees are adequately protected during development and incorporated into the design of new developments.
BI O31	Restrict the cutting of hedges during the bird-nesting season (1st March until 31st August), except in certain legally defined circumstances, in accordance with the provisions of the Wildlife (Amendment) Act 2000.
BI O32	Protect trees which are the subject of Tree Preservation Orders (see Table 12.3) and the 57 Champion and Heritage Trees in Kildare, which are identified on the Tree Register of Ireland.
BI O33	Ensure that when considering new forest proposals: a) Landscapes of scenic value are not unduly eroded. b) Areas with environmental and archaeological protections are safeguarded. c) A mixture of broadleaf and native conifer species (yew, juniper, and Scot’s pine) are planted where possible so as to support a variety of flora and fauna species and to enliven forestry landscapes. d) Promote the avoidance of deforestation or commercial afforestation

	within Natura 2000 sites unless directly linked to the management of the site for its qualifying interests.
BI O34	Manage, maintain, enhance, preserve, promote, encourage, and facilitate, as far as practicable, the preservation, proper provision, and retention of the existing network of native ancient woodlands and semi-natural woodlands of amenity value especially broadleaf species.
BI O35	Protect existing woodlands and trees and substantial areas of deciduous forest which are of amenity value and/or contribute to and interact with their landscape character and ensure that proper provision is made for their protection and management.
BI O36	Natural regeneration of peatlands, river, canal and railway corridors, grass verges along public roads and existing and future greenways shall be encouraged and the use of "Wildflower mixes" shall not be permitted unless they can be certified as being of both native Irish provenance and origin. Where tree planting occurs within semi-natural areas, native species of local provenance and origin should ideally be used, however in the interests of species diversity, non-native species may also be considered. Reduced mowing of vegetation along peatlands, river, canal, and railway corridors is encouraged.

Actions

It is an action of the Council to:

BI A14	Carry out a survey of trees within the main urban settlements as part of the preparation of Habitat Mapping for local area plans and to include policies for the protection of trees and hedgerows within local area plans where appropriate.
BI A15	Identify and include additional trees and stands of trees on the TPO register that are deemed to be of particular significance during the life of the plan.
BI A16	Encourage the awareness and engagement of the public in the identification and submission of trees for consideration for Tree Preservation Orders.
BI A17	Develop, in conjunction with the Parks Department of Kildare County Council a Tree Strategy for the county which would include policies on tree pruning, tree removals, tree planting, tree preservation and the treatment of trees in relation to services and utilities.
BI A18	Encourage initiatives supporting private and community-driven native tree and woodland planting schemes utilising available funding schemes.
BI A19	Engage with the Forestry Division of the Department of Agriculture, Food, and the Marine to develop a suite of "Neighbourwood" exemplar projects with local communities throughout Kildare.
BI A20	Review the County Kildare Hedgerow Survey (2006), over the life of the Development Plan, as appropriate.
BI A21	Develop a pilot project to demonstrate traditional hedgerow management skills including hedge laying.
BI A22	Develop a dataset of best quality hedgerows in the County, i.e. hedgerow hotspots and ensure ongoing conservation of these biodiverse areas.

12.10 Inland Waters: Lakes, Rivers, Streams and Groundwater

Over 112 km of the canals, the Grand Canal, Royal Canal and the Barrow Line, extend across Kildare. Once the lifeline of the local economy, forming the main transport routes in Kildare, these waterways and their towpaths now support a large eco-system of diverse plant and animal species along with a significant leisure resource in the county. Kildare is also traversed by some of the more productive and important salmonid systems in the region, the River Liffey, the River Barrow and the River Boyne.

Rivers and streams should be maintained in an open, semi-natural condition. Their corridors and valleys provide effective measures to protect and maintain biodiversity and to help manage fluvial and pluvial flooding while supporting a quality, multi-functional green network generating multiple benefits for the environment, tourism and society. Groundwater is important for supplying water and maintaining wetlands and river flows in dry periods. Groundwater resources should be protected and managed in a sustainable manner.

12.10.1 Riparian zones (Floodplains and Buffer Zones)

Riparian zones are vegetated areas bordering rivers and other bodies of surface water. They are particularly important, as they contain a range of habitats and species which are different from the surrounding landscape and the riparian corridor also acts as a wildlife corridor, enabling species to move from place. They include flood plains and buffer zones which play a key role in protecting/improving water quality in associated watercourses (streams, rivers, and lakes), thus providing environmental benefits.

Riparian zones are particularly vulnerable to damage from inappropriate development. A key requirement of an integrated watercourse protection strategy is the set-aside of sufficient land along the river margin or corridor. The buffer zone, if sufficiently large and managed will:

- Filter out pollutants and sediments from overland surface run off;
- Provide bank stabilisation which can assist in preventing fluvial erosion;
- Provide a refuge for animals with close affinity to rivers;
- Create habitat necessary for aquatic life;
- Provide amenity and recreation to local people and visitors to the area;
- Enhance flood alleviation.

Where developments are proposed adjacent to waterways, on private or publicly owned land, the Planning Authority will require a setback distance of an absolute minimum of 10m from the water's edge, however, the actual set-back will be determined by the scale and importance of the River, with up to 100m or more being required along the larger and more important rivers such as the Liffey, Barrow and Boyne (except on town centre/regeneration sites where there is a history of development or where there is a key public infrastructure required for public benefit). Riparian Zones are defined in Planning for Watercourses in the Urban Environment (IFI, 2020) as having three zones, (see Figure 12.2). These zones have distinct characteristics and can facilitate different uses as per Table 12.4. The buffer zone is

dependent on the nature and design of the development, with development only occurring within 48m from the water's edge.

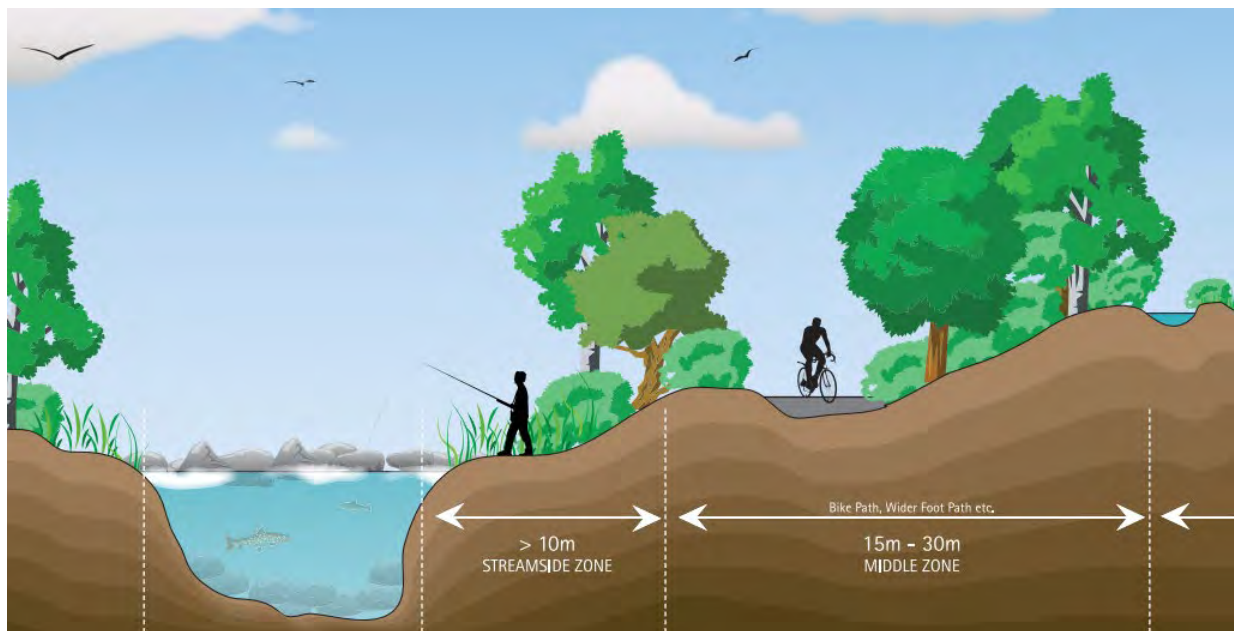


Figure 12.2 - Riparian Buffer zones (Source: *Planning for Watercourses in the Urban Environment*, IFI, 2020)

Characteristics	Streamside zone >10m	Middle zone 15m-30m	Outer zone >8m
Function	Protect the physical integrity of the stream ecosystem.	Provide distance between upland development and streamside zone. Acts as a sump/filter for nutrients and sediment.	Prevent encroachment and filter hard surface runoff.
Width	Minimum 10m plus wetland and other habitat.	15-30m depending on stream.	8m minimum setback to structures.
Vegetative target	Native riparian vegetation.	Managed woodland, some clearing/open space allowed.	Woodland encouraged, but usually turfgrass.
Allowable uses	Very restricted except for fishing or walking trails.	Restricted, e.g. some recreational uses such as bike path or larger footpaths can function as a flood zone.	Unrestricted e.g. residential uses, including lawn, swales, most stormwater treatment will occur here.

Table 12.4 - Recommended riparian buffer zones illustrating the sub-zones and their functional uses (adapted from: *Planning for Watercourses in the Urban Environment*, IFI, 2020)

The width of the riparian/buffer zone will depend on factors such as existing land use, land topography (e.g. slope), soil type, channel width/gradient and critical habitats to be protected. It is important that the buffer zone is large enough to protect the ecological integrity of the river (including emergent vegetation) and the riparian zone (bankside vegetation including trees) and has regard to the historical use of the area. The width of the buffer zone shall be determined having regard to the OPW's Strategic Flood Risk Assessment Maps (SFRAMs), historical flood maps and/or following input from an ecologist.

Key public infrastructure may be permitted within the riparian zone where there are no alternatives available or where it enhances the public and civic amenity or tourism potential of a site, such as a slipway, jetty, pontoon, angling platform, mooring post, etc.

Policy

It is the policy of the Council to:

BI P7	Recognise and promote inland waters, natural environmental assets and to protect rivers, streams and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment.
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Objectives

It is an objective of the Council to:

BI O37	Ensure the protection of rivers, streams and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment. Endeavour to re-open previously culverted streams and watercourses through any future development/redevelopment proposals.
BI O38	Require the preparation and submission of an Ecological Impact Assessment (EclA) including, but not limited to, bat and otter surveys for developments along river or canal corridors.
BI O39	Consult with Inland Fisheries Ireland (IFI) and Waterways Ireland in relation to any development (greenfield development or redevelopment of brownfield sites) that could potentially impact on the aquatic ecosystems and associated riparian habitats while taking account of 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites' (IFI, 2004) and 'Planning for Watercourses in the Urban Environment' (IFI, 2020).
BI O40	Support Inland Fisheries Ireland's pilot projects to investigate the incorporation of habitat restoration measures on waters draining the Bog of Allen into flood management schemes.
BI O41	Maintain riparian buffer zones and potential uses as identified in Table 12.4 when considering potential development and proposed development layouts within or adjacent to waterways.

BI O42	Ensure that any proposals for a National Peatlands Park will consider the important rivers and populations of native fish and other species, when draining the Bog of Allen area.
BI O43	Consult with Inland Fisheries Ireland (IFI) and Waterways Ireland in relation to any structures designed for crossing fisheries waters. In this regard consideration must be given to the following biological criteria: <ul style="list-style-type: none"> • species of fish required to safely pass • size of fish required to pass (life stage) • time of year in which fish passage is required • high and low design passage flows etc.
BI O44	Require that expert advice is sought from a suitably qualified bat expert, in developing lighting proposals along river and stream corridors or other important locations or corridors for wildlife, to mitigate impacts of lighting on bats and other species. The use of artificial lighting shall be avoided in streamside zones (see Figure 12.2) and artificial lighting should be restricted unless absolutely necessary in the middle zone (See Table 12.4). LEDs should, where permitted, be warm white to minimise disturbance to wildlife.
BI O45	Ensure that any runoff from developed areas does not result in any deterioration of downstream watercourses or habitats and require that pollution generated by a development is treated within the development area prior to discharge to local watercourses.
BI O46	Generally, prohibit infilling of land adjacent to rivers, including natural floodplains, prior to or during any development. This will only be permitted, where, in the opinion of the planning authority, there is an over-riding public interest in order to provide a key public infrastructure or to provide a more coherent design approach (in line with an approved urban design strategy) but, it will be subject to ensuring that adequate compensatory flood storage (if necessary) is provided elsewhere.
BI O47	Ensure the protection, improvement or restoration of riverine floodplains and to promote strategic measures to accommodate flooding at appropriate locations including nature-based solutions, in order to protect ground and surface water quality and build resilience to climate change.
BI O48	Avoid developing walking/cycling trails through sensitive ecological habitats. A multi-disciplinary team including an ecologist and flood risk expert shall review all riverine sites to determine the appropriate zonation (ref Table 12.4) and permissible uses.

12.11 Peatlands, Wetlands and Ramsar Sites

County Kildare contains a wide range of wetlands of international and national importance. Due to the topography, hydrology, climate and soils present it has wetland habitats ranging from raised bogs, fens, marshes, large riverine systems, a variety of lake types, wet woodlands and many more. They support a variety of habitats and species, function in the protection of water quality and/or flood control, are important carbon stores contributing to climate resilience and provide open space and recreational opportunities. The drained and degraded bogs go from being carbon sinks to very large carbon sources. The restoration of peatlands to their natural state will have benefits in terms of nature conservation, climate change and flood prevention and alleviation.

Peatlands are wetlands where the substrate is predominantly peat including bogs which are fed by rain and fens which are fed by ground or surface water. Actively growing, intact, raised bog is an extremely rare habitat. Irish raised bogs are of international importance representing 50% of all the conservation-worthy raised bogs remaining in Europe. Total area of Peat bogs and Moors in County Kildare³ is 10,389 ha (6% of Kildare land mass) of which 8.8% are protected.

The most notable wetland sites in the county include Pollardstown Fen, one of Ireland's largest and natural fen ecosystems, and Ballynafagh Bog and Mouds Bog, which both represent internationally significant areas of intact raised bog, a habitat that has been lost throughout much of the Irish midlands. The County Kildare Wetland Survey 2012-2014 identified 231 wetlands for local biodiversity interest in Kildare 125 of which are rated A (International), B (National), C+ (County) and C (Local) importance (See Tables 12.5 & 12.6).

As developments sited on peatlands have the potential to increase overall carbon losses, potentially undermining expected carbon savings (in the case of renewable energy developments) and damaging rare habitats of European importance, these factors must be considered in any environmental or ecological impact assessment prepared to accompany any planning applications.

Planning and Development (Amendment) (No. 2) Regulations 2011 require that work or development involving the drainage or reclamation of a wetland greater than 0.1 Ha requires planning permission. For drainage or reclamation of wetlands greater than 2 Ha, an Environmental Impact Assessment is required. The Council will require that an ecological impact assessment (including where necessary EIA) is carried out at the appropriate level in relation to proposals for drainage or reclamation of wetlands.

Ramsar Sites are designated for the conservation of wetlands, particularly those of importance to waterfowl. These sites were designated under the Ramsar Convention on Wetlands of International Importance. Pollardstown Fen is designated as a Ramsar Site.

³ CORINE Landcover 2018

County Kildare Wetland Survey - Rating of Importance of Ecological Sites

A Internationally important

- Sites designated (or qualifying for designation) as SAC or SPA under the EU Habitats or Birds Directives.
- Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Sites designated (or qualifying for designation) as SAC for salmonids or Annex II species under the EU Habitats Directives.
- Major salmon river fisheries. Major salmonid (salmon, trout or char) lake fisheries.

B Nationally important

- Sites or waters designated or proposed as an NHA* or statutory Nature Reserves.
- Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive).
- Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000.
- Major trout river fisheries.
- Water bodies with major amenity fishery value. Commercially important coarse fisheries.

C+ County value

- Area of Special Amenity.
- Area subject to a Tree Preservation Order.
- Area of High Amenity, or equivalent, designated under the County Development Plan.
- Resident or regularly occurring populations (assessed to be important at the County level) of the following:
 - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
 - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
 - Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list.
- Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.
- County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP, if this has been prepared.
- Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

C High value, locally important

- Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species.
- Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive.

County Kildare Wetland Survey - Rating of Importance of Ecological Sites	
•	Small water bodies with known salmonid populations or with good potential salmonid habitat.
D Moderate value, locally important	
•	Sites containing some semi-natural habitat or locally important for wildlife.
•	Small water bodies with some coarse fisheries value or some potential salmonid habitat.
•	Any water body with unpolluted water (Q-value rating 4-5).
E Low value, locally important	
•	Artificial or highly modified habitats with low species diversity and low wildlife value.
•	Water bodies with no current fisheries value and no significant potential fisheries value.

Table 12.5 - County Kildare Wetland Survey Sites - Rating of Importance of Ecological Sites

KWS Site Code	Site Name	Easting	Northing	Ranking
14	Ballynafagh Bog SAC	680933.0 924	728027.81 11	A
53	Barrow Canal - River Barrow	668435.6 312	692735.54 36	A
5	Pollardstown Fen SAC	677001.8 735	716199.40 05	A
7	Rye Water Valley/Carton SAC (Kildare)	697251.6 407	737660.62 74	A
8	Ballynafagh Lake SAC	680933.0 983	728927.61 58	A
44	Barrow Valley at Tankardstown Bridge - River Barrow	670493.1 651	688123.53 82	A
13	Leixlip Cold Spring, Louisa Bridge - Rye Water Valley / Carton SAC	699429.1 658	736825.79 55	A
4	Mouds Bog SAC	678965.4 628	718942.79 42	A
73	Pollardstown Wood - Pollardstown Fen SAC	676633.9 514	715830.48 25	A
19	Poulaphouca Reservoir Spa cNHA (Kildare)	695344.8 468	709164.83 11	A
6	Red Bog SAC	697900.3 469	717307.04 45	A
11	River Barrow and River Nore SAC (Kildare)	665645.2 580	697348.55 31	A
10	Ardkill Bog - Carbury Bog NHA	669335.6 505	735426.26 95	B
24	Ballina Bog cNHA	670702.3 932	741396.96 84	B
139	Ballybought (Naas South By)	691267.7 201	707042.31 58	B
28	Ballysooghan Bog cNHA - Ballydermot	664452.6	722235.15	B

KWS Site Code	Site Name	Easting	Northing	Ranking
	(Kildare)	332	48	
2	Carbury Bog NHA	669549.6 049	735537.24 43	B
239	Corbally Branch - Grand Canal cNHA	686796.7 593	718225.90 76	B
25	Curragh (Kildare) cNHA	676933.8 655	712031.30 65	B
46	Derryvullagh Island cNHA - Kilbarry	668530.6 416	700633.82 54	B
30	Donadea Wood cNHA	683491.5 692	732535.81 87	B
43	Grand Canal (Kildare) - Grand Canal cNHA	696898.6 512	729289.44 62	B
22	Grand Canal cNHA (Kildare)	667893.9 357	730985.23 97	B
188	Haggard Bog	668085.9 300	736844.96 87	B
95	Harristown Commons North cNHA	688031.4 598	713131.00 85	B
3	Hodgestown Bog NHA	679933.3 218	730027.38 27	B
32	Hortland Bog cNHA	679149.5 267	735334.23 60	B
136	Kingsbog Common	671133.1 149	709519.88 15	B
42	Liffey at Osberstown cNHA - River Liffey (Kildare)	686931.7 466	720829.34 11	B
41	Liffey Bank Above Athgarvan cNHA - River Liffey (Kildare)	682448.6 635	711519.38 90	B
64	Liffey Oxbow - River Liffey (Kildare)	694894.0 946	730748.14 14	B
15	Liffey Valley Meander Belt cNHA - River Liffey (Kildare)	691002.7 950	709947.68 48	B
1	Lodge Bog cNHA - Lodge	671499.1 248	726073.28 59	B
49	Lullybeg Butterfly Reserve - Ballydermot (Lullymore)	668197.8 385	725616.40 23	B
34	Lullymore West cNHA	669237.6 157	726111.28 95	B
69	Moods - Grand Canal cNHA	680523.1 622	725067.45 59	B
112	Mulgeeth Bog	676315.1 490	736776.93 88	B
26	Oakpark cNHA (Kildare)	673722.4 330	680207.24 86	B
87	Rathangan - Grand Canal cNHA	668629.7 126	719828.65 57	B

KWS Site Code	Site Name	Easting	Northing	Ranking
63	Rathcor Spring - Grand Canal cNHA	684232.2 891	713830.87 69	B
40	River Liffey (Kildare) cNHA	690696.9 903	729368.46 52	B
36	Royal Canal (Kildare) - Royal Canal cNHA	699803.0 884	737194.71 32	B
21	Royal Canal cNHA (Kildare)	672274.0 585	742136.79 95	B
18	Suncroft Fen cNHA	677007.8 258	707507.28 95	B
211	Timahoe North	676034.1 978	734964.33 33	B
78	Allenwood North - Timahoe South	674727.4 352	727799.89 42	C+
110	Allenwood North East Cutover	676634.0 234	728027.83 45	C+
81	Allenwood Road Wood	676900.9 566	726579.14 74	C+
100	Allenwood South East Bog	674934.3 765	725528.38 60	C+
194	Ballina Ponds / Moyvalley Golf Club	671726.1 662	740542.14 80	C+
79	Ballindoolin Bog Wood	665036.5 978	738025.72 92	C+
214	Ballydermot (Lullymore)	668962.6 699	725173.49 44	C+
27	Ballymore Eustace cNHA	692538.4 591	709584.75 53	C+
109	Ballynakill Lower Bog	672634.9 054	730527.31 38	C+
60	Ballysax	678933.4 119	708532.05 69	C+
102	Ballyteige South Bog	674434.4 683	722728.99 61	C+
91	Bishopsland	693590.2 259	708829.91 38	C+
152	Blackrath West	680873.9 503	700797.72 97	C+
89	Blacktrench	680855.0 614	720401.46 73	C+
97	Bog of Allen Nature Centre	670545.3 307	725912.32 58	C+
168	Carnalway	686667.7 501	712145.23 03	C+
12	Dysart Thermal Springs cNHA	679133.5 499	738225.60 92	C+

KWS Site Code	Site Name	Easting	Northing	Ranking
92	Harristown Commons South (Dunshane Common)	687804.5 075	712860.06 87	C+
247	Hobartstown West	677648.6 010	688299.46 73	C+
98	Lodge Bog South cNHA - Lodge	670909.2 470	725092.50 18	C+
33	Lullymore East Bog Woodland cNHA	670703.2 929	725292.45 95	C+
80	Martinstown	678833.4 229	706432.51 40	C+
129	Oghil Bog	666118.2 073	709587.89 14	C+
246	Rahin Wood	661587.3 486	738598.62 34	C+
57	St Bridget's Well / Japanese Garden	673434.6 215	711031.54 16	C+
56	St Patricks Well 1	682907.6 087	719173.72 29	C+
58	St Peters Well	681642.9 730	733166.69 22	C+
242	Swordlestown South	690088.0 148	713380.94 29	C+
172	Swordlestown South Transition Mire	690363.9 565	713634.88 61	C+
52	Timahoe Bog - Timahoe North	675769.2 534	734700.39 20	C+
245	Usk Created Wetlands	683786.3 255	702811.27 66	C+
234	Walshestown	692683.4 631	715177.53 76	C+
77	Carrick	663536.9 135	736526.06 20	C
61	Carrick Hill	663341.9 608	737357.88 29	C
119	Castletown Demesne Ponds	697570.5 446	734213.37 34	C
135	Coolnafearagh (Kildare)	660790.3 742	710966.61 77	C
111	Corkeragh Bog	682811.7 020	730452.27 46	C
83	Crabtree River - Ballydermot	667548.9 705	724052.74 48	C
93	Crohane	662591.9 264	697847.45 85	C
106	Cushaling East Wet Heath - Ballydermot	667436.0 148	727527.99 17	C

KWS Site Code	Site Name	Easting	Northing	Ranking
217	Cushaling River Valley	666942.1 238	727849.92 44	C
94	Derryoughter East	665659.2 761	702565.41 91	C
146	Downings North Bog	680932.0 845	726772.08 36	C
70	Drehid Wood - Timahoe North	674534.5 161	734026.54 48	C
116	Drumachon Bog - Timahoe North	675134.3 824	733426.67 16	C
117	Drumcahon Cutaway - Timahoe South Cutaway	674934.4 168	732026.97 62	C
47	Drumsru Bog - Lodge	671831.0 424	724303.66 81	C
54	Golden Falls Reservoir	693330.2 812	708631.95 83	C
71	Greatconnell	682632.6 413	714630.71 16	C
75	Heritage Park Wood	669935.4 580	725028.52 07	C
59	Hill of Allen	675651.1 916	720555.46 16	C
62	Kilbrook Spring	681393.0 905	742224.72 97	C
190	Kilglass	668641.8 239	739088.47 97	C
196	Kilrainy	665993.4 077	740753.13 34	C
123	Kilwoghan Wetland	695550.9 821	734554.31 14	C
66	Knocknacree Wood	679533.1 623	680838.08 56	C
237	Lakelands Ponds	689274.2 260	718824.76 37	C
76	Loughnacush - Timahoe South	672934.8 535	732626.85 69	C
202	Lullybeg Cutaway - Ballydermot (Lullymore)	668641.7 405	725336.46 07	C
96	Lullymore East Cutaway - Lodge	671335.1 513	724528.62 19	C
86	Lullymore Wetlands - Ballydermot (Lullymore)	669315.5 925	725018.52 61	C
118	Lyreen River	693892.3 687	738339.50 01	C
137	Maddenstown South	673371.6 210	708186.16 02	C

KWS Site Code	Site Name	Easting	Northing	Ranking
67	Moone Woodlands	679133.2 945	692835.47 21	C
99	Mulgeeth Cutaway - Timahoe North	675334.3 588	736426.02 03	C
147	Mylerstown (Connell By)	679899.3 013	725685.32 52	C
50	Newtowndonore Bog	679933.2 792	723328.83 66	C
103	North of Heritage Park	670035.4 392	725528.41 18	C
177	Osberstown Attenuation Pond	688100.4 964	721289.23 47	C
23	Plantation Fen cNHA – Ballydermot (Lullymore)	669435.5 665	725028.52 34	C
90	Punchers Grange	674263.4 931	720590.46 12	C
249	Punchestown Racecourse Wetlands	691992.6 152	715532.46 43	C
51	Rathmore Bog	669935.4 965	731527.11 14	C
38	River Barrow Floodplain (Kildare)	664055.6 191	700920.78 40	C
74	Royal Oak - Ballina Bog cNHA	670383.4 660	741966.84 67	C
17	St. Patricks Hill Thermal Spring cNHA	694330.2 228	731626.95 39	C
210	Timahoe South	674748.4 462	730314.34 87	C
227	Walterstown	670838.1 711	707859.24 38	C
104	West of Lugherra River	666636.1 826	726528.21 26	C
101	Allenwood Southwest Bog - Lodge	672534.8 969	725528.39 87	D
140	Alliganstown	690414.9 017	706378.46 50	D
183	Ardclogh	695057.0 361	727619.81 97	D
108	Ballybrack Bog	671305.1 323	720016.60 12	D
215	Ballydermot	666516.1 962	724297.69 70	D
88	Ballyhagan	667898.9 387	731670.09 12	D
240	Ballymadeer / Backweston Campus Ponds	699657.0 912	733672.47 83	D

KWS Site Code	Site Name	Easting	Northing	Ranking
125	Ballysax Great	680091.1 646	709397.86 26	D
157	Ballysax Great Quarry	680088.1 623	708856.98 03	D
84	Bog of Allen Killinthomas - Ballydermot	665336.4 525	724328.69 63	D
185	Boherhole	686371.9 449	732254.86 35	D
191	Brackagh	664241.7 787	739440.42 70	D
85	Brockagh	677296.8 724	726835.08 97	D
65	Burton Hall Demesne	678633.3 565	679938.28 59	D
45	Cappagh Bog	682442.8 647	742307.70 58	D
120	Celbridge Abbey / Simmonstown house ponds	696981.6 575	732431.76 36	D
122	Celbridge Pond	695880.9 100	734416.33 94	D
128	Claremount	665806.4 395	739370.43 38	D
142	Cloney Bog - Kilbarry	667188.9 384	701617.61 79	D
150	Colbinstown	683089.4 579	698879.13 63	D
170	Coolsickin Or Quinsborough	663561.7 814	713250.10 87	D
127	Cornamucklagh	667322.1 181	740425.19 72	D
132	Curragh (Ed Ballysax East) North - Curragh (Kildare) cNHA	679395.3 305	712087.28 16	D
134	Derrylea	659583.6 557	714999.74 84	D
31	Doogary Cross Roads cNHA	680533.1 536	724028.68 14	D
16	Dunlavin Marshes cNHA (Kildare)	684612.1 451	702715.29 32	D
175	East Kildare Sandpits	697406.4 499	716743.17 00	D
233	Flemingtown South	689901.0 602	714147.77 71	D
232	Flemingtown South Or Tonaphuca	689931.0 490	713396.94 02	D
209	Gilltown	679446.4 452	732766.79 11	D

KWS Site Code	Site Name	Easting	Northing	Ranking
154	Gilltown (Naas South By)	686163.8 327	707451.25 42	D
155	Grangemore	686901.6 756	708060.11 78	D
189	Hodgestown (Ed Kilcock)	686430.9 788	738734.45 77	D
138	Ironhills	674112.4 521	706654.48 95	D
238	Jigginstown Lake	686563.8 072	717812.99 86	D
244	Kennycourt Wetlands	688463.3 274	706560.43 59	D
220	Kilbarry	668931.5 554	700924.76 03	D
250	Kilkea Castle Golf Course Ponds	674648.2 579	688502.43 69	D
184	Ladycastle Lower / K Golf Club	691511.8 128	729155.50 68	D
212	Lodge	671935.0 245	725103.49 40	D
55	Lyreen Angling Center	694230.2 983	738625.43 61	D
205	Merville and Milltown (Kildare)	684968.0 598	701205.62 01	D
153	Moortowncastle	680261.1 117	706375.51 91	D
160	Newabbey	684898.1 175	709135.89 44	D
72	Newbridge School Wood	680711.0 624	715268.58 32	D
228	Oghil	668293.7 419	711317.50 51	D
236	Oldstown Demesne Lake	689084.2 794	720700.35 71	D
241	Parsonstown Ponds	699079.2 237	734687.26 16	D
82	Pluckerstown	673212.7 266	721541.26 03	D
35	Prosperous Bog	683472.5 542	729726.42 84	D
121	Quarry Pond Celbridge	697514.5 463	732889.66 10	D
161	Sallymount Demesne	687068.6 455	709143.88 11	D
148	Shanrath West	669557.3 862	692759.53 33	D

KWS Site Code	Site Name	Easting	Northing	Ranking
207	Tober Demesne Wetlands (Kildare)	688840.2 340	704541.87 33	D
222	Ummeras	662845.9 476	715404.64 47	D
133	Ummeras More	664212.6 522	715802.55 16	D
243	Usk Quarry Ponds	684936.0 692	701689.51 49	D
225	Alliganstown North	690605.8 619	706673.39 97	E
224	Alliganstown South	690891.7 969	706188.50 37	E
216	Ballydermot (Derrybrennan)	670038.4 547	728290.81 26	E
159	Ballyfarsoon	664490.5 586	708871.05 49	E
199	Ballyonan	668171.9 536	743398.54 87	E
144	Ballysaxhills	680547.0 631	708976.95 18	E
163	Ballysaxhills Farm Pond	680348.1 095	709544.82 94	E
158	Ballysaxhills Quarry	681178.9 250	708864.97 29	E
208	Balrinnet Quarry	667535.0 685	739885.31 30	E
176	Boherkill	669911.4 217	717539.14 61	E
226	Boleybeg	689618.0 781	706906.35 43	E
182	Boston	694911.0 651	727290.89 19	E
169	Corbally (Connell By)	684907.1 339	712358.19 35	E
248	Craddockstown West	690957.8 425	715981.37 24	E
164	Curragh (Ed Ballysax East) Pond	681150.9 357	709704.79 04	E
145	Curragh (Waverley Cottages)	680257.1 295	709597.81 83	E
126	Curragh Cutover - Curragh (Kildare) cNHA	678036.6 182	710647.60 16	E
186	Derrycrib	681773.9 556	734762.34 54	E
130	Dysart	679509.4 609	737102.85 05	E

KWS Site Code	Site Name	Easting	Northing	Ranking
251	Halverstown Gravel Pit	681957.7 388	705711.65 48	E
131	Hortland	680323.2 826	736729.92 68	E
230	Hybla Or Ballyneage	664163.6 441	711941.38 99	E
195	Killickaweeny	685254.2 462	740599.06 02	E
206	Kilmalum and Burgage (Kildare)	696782.5 581	712782.03 55	E
193	Kilrathmurry	665215.5 749	740556.18 02	E
166	Kineagh	682318.6 843	710184.67 99	E
229	Lackaghmore	667305.9 597	711877.38 84	E
141	Loughabor Bog - Kilbarry	671152.0 710	700904.75 41	E
252	Lowtown Gravel Pit	677858.7 368	724593.57 32	E
213	Lullymore	671029.2 319	726959.09 62	E
181	Millicent South	686848.7 881	724421.56 12	E
218	Mouds	680607.1 267	722289.05 87	E
231	Mountrice	665202.4 240	713194.11 29	E
149	Moyleabbey	680952.9 170	697383.47 27	E
201	Moyvally	670999.3 466	744018.39 90	E
143	Mullaghmoynes West	675557.1 269	704475.95 60	E
187	Mylerstown (Carbury By)	670334.4 414	736557.01 90	E
173	Newtown Great	694389.0 972	715784.39 59	E
156	Nicholastown (Kilcullen By)	684804.1 342	708469.04 00	E
178	Osberstown	688557.4 103	723226.81 12	E
180	Palmerstown Demesne	692240.6 160	723629.70 27	E
192	Pitchfordstown	687095.8 437	739836.21 50	E

KWS Site Code	Site Name	Easting	Northing	Ranking
203	River Griese Wetland	679365.2 459	693346.35 97	E
37	Sillagh Marsh cNHA	691258.7 615	713517.90 66	E
171	Swordlestown South Pool	690841.8 508	713325.95 06	E
221	Ticknevin	667552.0 079	730661.31 17	E
39	Usk Marshes	684214.2 288	702126.42 35	E
174	Walshestown (Naas South By)	692710.4 620	715907.37 87	E

Table 12.6 - County Kildare Wetland Survey Sites

NOTE: Candidate Natural Heritage Area (cNHA) is the name given to wildlife sites that are proposed by the NPWS and by third parties for consideration as NHAs. The cNHA sites have no legal protection until they are within the formal NHA designation process.

Policy

It is the policy of the Council to:

BI P8	Ensure that Kildare's wetlands and watercourses are retained for their biodiversity, climate change mitigation properties and flood protection values and at a minimum to achieve and maintain at least good ecological status for all wetlands and watercourses in the county by, at the latest, 2027 in line with the Water Framework Directive and Ramsar Convention.
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Objectives

It is an objective of the Council to:

BI O49	Protect wetland sites that have been rated A (International), B (National) C+ (County) and C (Local) importance as identified in the County Kildare Wetlands Survey 2012-2014, (See Tables 12.5 & 12.6). Any development within the zone of influence of these listed wetland sites should be subject to EclA and where appropriate, hydrological impact assessment.
BI O50	Protect and conserve wetlands from infilling, drainage, fragmentation, degradation, and resist development that would destroy, fragment, or degrade any wetland identified as part of the County Kildare Wetland Survey 2012-2014, (See Table 12.6).
BI O51	Ensure that an ecological impact assessment is undertaken in conjunction with proposals involving drainage or reclamation of wetlands identified in Table 12.6. Impact assessment of all developments on peatlands shall consider peatland stability, carbon emissions balance, Hydrology and Ecology.
BI O52	Require the preparation and submission of a Hydrological Report/Assessment for significant developments within and in close proximity to protected raised bogs and to take account of same in the assessment of impacts on the integrity of peatland ecosystems.
BI O53	Work with relevant stakeholders on suitable peatland sites in order to demonstrate best practice in sustainable peatland conservation, management and restoration techniques to promote their heritage and educational value subject to ecological impact assessment and appropriate assessment screening.
BI O54	Work with relevant agencies such as EMRA, BnM, the NPWS, Coillte and adjacent councils to prepare a comprehensive after use framework plan for large cutaway bog sites and associated workshops, office buildings and industrial sites which provide for future sustainable environmental needs and are a significant resource for amenities when peat harvesting ends.
BI O55	Protect, conserve, and manage the character and appearance of ecological and archaeological heritage and amenity values of peatland landscapes and historic/ancient walkways through bogs, by promoting high environmental standards.

BI O56	Ensure that development proposals or activities that may impact on sensitive water habitats, in particular wetlands (identified as part of the County Kildare Wetland Survey 2012-2014, (See Table 12.6), shall not be permitted without the introduction of mitigation measures agreed in writing with the Council to eliminate negative environmental impacts.
BI O57	Support the implementation of the recommendations of the National Peatlands Strategy 2015, as they relate to County Kildare.

Actions

It is an action of the Council to:

BI A23	Review and update the County Kildare Wetland Survey 2012-2014 during the lifetime of the plan.
BI A24	Run a public awareness campaign related to the diverse and valued wetland resource of the county, to include, inter alia, the provision of important ecosystem services.
BI A25	Provide training for Local Authority staff on wetland issues when assessing development proposals and planning applications.

12.12 Invasive Species and Noxious Weeds

Invasive species, both invertebrate and plants, can represent a major threat to local, regional, and national biodiversity. Terrestrial and aquatic habitats can be negatively affected, resulting in significant damage to the environment and economic interests, such as agriculture, forestry and civil infrastructure.

Prohibitions are in place in relation to the introduction or dispersal of certain invasive species as set out in the Third Schedule of the European Communities (Birds and Habitats Regulations 2011 (S.I. 477/2011) and as set out in EU Regulations 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species.

Thistle, Ragwort, Dock, Common Barberry, Male Wild Hop plant & Wild Oat are scheduled as noxious weeds under the Noxious Weeds Act, 1936. Noxious weeds, most of which are native plants of disturbed ground, impact adversely on agriculture. They may compete for space, harbour pests or diseases, or be injurious to livestock or human beings. It is important to note that, as native species, noxious weeds (some noxious weeds are native species), and as such, are part of our natural biodiversity and are utilized by a range of invertebrate and bird species. The management objective for these native species should be control and not complete eradication. The loss of such species will also result in the loss of species that depend on them as a food source. Creeping thistle (*Cirsium arvense*) for example, is a food plant for over twenty species of butterfly and moth, with four species of moth depending on the genus *Cirsium* as their sole food plant. Thistle seed is also an important food resource for goldfinch. Ragwort (*Senecio jacobea*) has four species of moth dependant on it including the day-flying cinnabar moth.

Policy

It is the policy of the Council to:

BI P9	Implement and support measures for the prevention and/or eradication of invasive species within the county and the control of noxious weeds.
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Objectives

It is an objective of the Council to:

BI O58	Require all development proposals to address the presence or absence of invasive alien species on proposed development sites and (if necessary) require applicants to prepare and submit an Invasive Species Management Plan where such species exist, in order to comply with the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011-2015.
BI O59	Encourage, through Citizen Science, the public's awareness in the identification and eradication of invasive species and to provide training with respect to potential threats caused by invasive species, particularly their methods of dispersal and appropriate control and removal measures in association with relevant authorities.

Actions

It is an action of the Council to:

BI A26	Prepare a programme of mapping of invasive species in the county and explore the development of a web portal to allow residents of County Kildare to report invasive species in the County, during the lifetime of this Plan.
BI A27	Determine, as a priority, whether there is a potential threat of invasive species to the protected sites within the County, and to begin a dedicated programme of eradication, beginning with the Natura 2000 sites.
BI A28	Begin a dedicated campaign to build awareness of invasive species amongst all residents of the county. Additionally, this programme will provide training to Community Groups on appropriate control and removal measures for responsive species.

12.13 Geology

The Geological Survey of Ireland (GSI), in partnership with the National Parks and Wildlife Service, is seeking to identify geological and geomorphological sites of national significance for statutory designations as Natural Heritage Areas. Other geological sites of national or local importance are being identified as Sites of Geological Importance and by virtue of their recognition in Development Plans will be protected from potentially damaging development. An audit of the Geological Heritage of County Kildare was carried out in 2005, which identified 22 geological sites of interest in the county. The list of Sites of Geological Importance is set out in Table 12.7

Site Name	Geological Interest	Location
Chair of Kildare	Precambrian - Devonian Palaeontology	Carrickanearla, Conlanstown, Cannonstown.
Dunmurry Hill	Precambrian - Devonian Palaeontology	Dunmurry
Hill of Allen	Cambrian-Silurian	Barnacrow
Slate Quarries	Cambrian-Silurian	Slate Quarries Ballysax
Ballysax	Quaternary	Curragh
Glen Ding	Quaternary	Blessington, Athgarrett, Newtown Great, Newtown Park
Pollardstown Fen and Springs	Quaternary	Scarlettstown, Roseberry, Rathbride, Cornelscourt
Moorhill	Quaternary	Kilcullen
The Curragh	Quaternary	St. Ledgers Bottoms
Ballykane Hill	Lower Carboniferous	Kilrainy
Carbury Castle	Lower Carboniferous	Carbury
Carrick Hill, Edenderry	Lower Carboniferous	Carrick
Liffey Oxbow	Fluvial/Lacustrine Geomorphology	Celbridge
Liffey Valley	Fluvial/Lacustrine Geomorphology	Ballymore Eustace - Kilcullen
Kilbrook Spring	Hydrogeology	Kilbrook
Louisa Bridge Springs (Cold)	Hydrogeology	Leixlip
Louisa Bridge Springs (Warm)	Hydrogeology	Leixlip
Rathcore Spring	Hydrogeology	Herbertstown
St. Brigid's Well - Japanese Gardens	Hydrogeology	Kildare
St. Patrick's Well (1)	Hydrogeology	Barrettstown, Naas
St. Patrick's Well	Hydrogeology	Ardrass Lower
St. Peter's Well	Hydrogeology	Dunmurraghill

Table 12.7 - Sites of Geological Importance

Policy

It is the policy of the Council to:

BI P10	Maintain and protect the conservation value of geological sites of national or local importance and seek the sustainable management of the county's geological heritage resource as listed in Table 12.7.
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Objectives

It is an objective of the Council to:

BI O60	Consult with the Geological Survey of Ireland regarding any development proposals within or likely to have an impact on Sites of Geological Importance set out in Table 12.7.
BI O61	Contribute towards the protection from inappropriate development of Geological Natural Heritage Areas that become designated during the lifetime of this Plan.
BI O62	Promote, encourage, and support the provision of access to geological and geo-morphological features of interest in cooperation/consultation with landowners (where appropriate/practicable).
BI O63	Where appropriate support the restoration of Sites of Geological Importance (identified in Table 12.7).

12.14 Green Infrastructure (GI)

12.14.1 EU Policy

Responding to the Biodiversity Strategy, the EU published 'Building a Green Infrastructure for Europe' (2014) and 'Green Infrastructure: Enhancing Europe's Natural Capital' Strategy (2013), which sets out to promote the deployment of Green Infrastructure in the EU in urban and rural areas. The strategy aims to promote and facilitate Green Infrastructure (GI) projects. The EU GI strategy is made up of the following four main elements:

- Promoting GI in the main EU policy areas;
- Supporting EU-level GI projects;
- Improving access to finance for GI projects,
- Improving information and promoting innovation.

12.14.2 National Policy

In August 2010, Comhar - The Sustainable Development Council, published 'Creating Green Infrastructure for Ireland: Enhancing Natural Capital for Human Wellbeing'. This document proposes an approach and a set of principles that should be followed in Green Infrastructure planning.

12.14.3 Green infrastructure general

The environmental and heritage resources are vital for our county and can be described as the county's 'Green Infrastructure'. Green Infrastructure is broadly defined as "a strategically planned and managed network featuring areas with high quality biodiversity (uplands, wetlands, peatlands, rivers and coast), farmed and wooded lands and other green spaces that conserve ecosystem values which provide essential services to society" (Comhar, 2010).

Green Infrastructure planning involves a holistic approach and should be provided as an integral part of sustainable development. GI planning promotes a multifunctional and spatially connected land use perspective in contrast to the 'grey' (man-made, constructed) infrastructure approaches that serve one single objective. An area of land can perform several functions and offer multiple benefits if its ecosystems are in a healthy state. GI aims to enhance nature's ability to deliver multiple valuable ecosystem goods and services, potentially providing a wide range of environmental, social, climate change adaptation and mitigation benefits – including water purification, air quality, carbon sequestration, space for biodiversity, recreation and amenity.

Strategic Green Infrastructure planning will assist in meeting statutory obligations under EU directives and national legislation, such as the Water Framework Directive, Strategic Environmental Assessment (SEA), Floods Directive and Birds and Habitats Directives.

Policy

It is the policy of the Council to:

BI P11	Identify and map the key elements of the green infrastructure network in Kildare; and seek to protect, enhance, and expand the County's green infrastructure network, through informed, evidence-based methods, which do not threaten the integrity of existing native biodiversity.
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Action

It is an action of the Council to:

BI A29	Map tree canopy coverage in urban areas in conjunction with the preparation of statutory Local Area Plans with a view to increasing same by, where possible, 30%, as a minimum.
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12.14.4 Green Infrastructure approach to spatial planning

Green Infrastructure comprises an interconnected network of natural, semi-natural and artificial habitats, green spaces and ecological areas that traverse our urban and rural areas. GI can include parks, open spaces, rivers, farmland, playing fields, woodlands, allotments and private gardens which surround and intersperse our towns and villages. Individually, each Green Infrastructure site has an important role and benefit in both urban and rural areas which can be strengthened and enhanced when the sites are linked together into a network of Green Infrastructure. Many social, economic and

environmental benefits can be achieved especially when the Green Infrastructure is proximate to where people live and work. Existing areas of green infrastructure mostly coincide with important areas for biodiversity and in the main these areas should be avoided, where possible. An intention of route selection should be to examine alternatives to the use of existing Green Infrastructure.

Any new walking and cycling trails within existing areas of Green Infrastructure will require environmental assessments to be carried out. Transport infrastructure (including walking and cycling trails) provides potential opportunities to act as new Green Infrastructure corridors.

The benefits of Green Infrastructure include the following:

- Attracting businesses and inward investment by creating an attractive environment;
- Access nature, outdoor recreation and for social interaction;
- Space for nature and wildlife to flourish;
- Recreational, tourism and cultural roles;
- Climate change adaptation - for example flood alleviation and cooling urban heat islands,
- Forestry, crop production, agriculture and energy development;
- Local food production - in allotments, gardens and through agriculture;
- Provides green buffers /green wedges between built up areas;
- Improves air quality;
- Environmental education
- Improves health and well-being;
- Creating a sense of place and local distinctiveness
- Encouraging physical activity and improved health and well-being by providing quality green spaces for walking and cycling and other physical activity.

Policy

It is the policy of the Council to:

BI P12	Recognise the importance of Green Infrastructure in Kildare and protect this valued biological resource, the ecosystem services it provides and the contribution to climate resilience.
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Objectives

It is an objective of the Council to:

BI O64	Ensure the protection, enhancement and maintenance of Green Infrastructure in Kildare.
BI O65	Support the development of a Regional Green Infrastructure Strategy and the identification, management, development and protection of strategic GI connections in co-operation with Kildare's neighbouring counties and the Midland and Eastern Regional Assembly.

BI O66	Develop a strategy, to identify a series of greenbelt/green spaces (in addition to those identified in this CDP) to retain and protect between the growing settlements within Kildare during the lifetime of the Plan with particular attention to the undeveloped areas between Celbridge, Leixlip and Maynooth and to collaborate with South Dublin County Council, where appropriate.
BI O67	Require that all Local Area Plans protect and manage the Green Infrastructure network in an integrated and coherent manner and add additional local Green Infrastructure corridors where possible.
BI O68	Provide for the incorporation of underpasses and/or Green Bridges at ecologically sensitive locations on the county's road and rail corridors (including those along disused railway corridors) that will facilitate the free movement of people and species through the urban and rural environment.
BI O69	Promote a network of paths and cycle tracks to enhance accessibility to the Green Infrastructure network across the County, while ensuring that the design and operation of the routes respect, and where possible, enhance the ecological potential of each site.

Actions

It is an action of the Council to:

BI A30	Complete the mapping of Green Infrastructure for each town and village in County Kildare and to develop specific policies and objectives for each town specifically by incorporating green infrastructure policies and objectives into the various Local Area Plans as they are being prepared.
BI A31	Work with Bord Na Mona and other stakeholders to prepare a Green Infrastructure Masterplan that will inform the delineation of core areas, stepping stones and corridors (long distance peatways) as identified in Sections 12.14.6, 12.14.7 and 12.14.8, that may inform the designation of an interconnected Bog of Allen Nature Reserve, Special Amenity Area Order and/or National Peatlands Park.

12.14.5 Kildare County Council's Green Infrastructure Strategy

There are three key components to Kildare's Green Infrastructure Strategy:

- 1. Core Areas:** These are large geographical areas of influence and importance, for reasons of ecology, landscape, designation, heritage, environmental management and ecosystem services.
- 2. Stepping Stones:** These are smaller geographical areas but either critically important because of their environmental quality (i.e., local native woodlands, intact bogs/peatlands, wetlands), local amenity value (i.e., urban parks) or because of their scale as undeveloped areas, such as Coillte forestry plantations.
- 3. Corridors:** These are the connectors providing vital linkages in the networks, for example, canals, stream/river corridors and the associated riparian corridors or valleys, disused railway lines, etc.

12.14.6 The Core Areas

Lying within the centre of the County close to Kildare, Newbridge and Milltown lies the Curragh, Pollardstown Fen and Maud's Bog – each of which are individually distinct, with their own unique habitats. To the south of the Curragh, lies both disused and operational sand and gravel pits with some distinctive environmental characteristics and on the edge of these sites site the Royal Site of Dun Ailinne – an impressive heritage and hilltop location with a large enclosed circular ditch; and south of this again is the Old Kilcullen Hill (heritage site). The sites are in relative proximity to each other, with just 1.5 kilometres separating the larger three sites from each other (the Curragh, Pollardstown and Mouds Bog). Collectively, these areas represent an important Core Area of the GI Strategy.

Other Core Areas in or adjoining the plan boundary are identified in 12.14.6.4 and 12.14.6.5.

12.14.6.1 The Curragh

The Curragh is a relatively flat open plain of almost 2,000 Hectares of common land situated between Newbridge and Kildare Town. The Curragh Aquifer is a very important aquifer that feeds the nearby Pollardstown Fen. The good drainage of sandy soil is noted for its open aspect, rare plant species and a history of horse training and sheep grazing.

12.14.6.2 Pollardstown Fen

The Fen is a National Nature Reserve located approximately 3km west of Newbridge. It is the largest remaining calcareous spring-fed fen in Ireland, extending over 220 hectares a large proportion of which is State owned. It comprises important fen ecosystem with unique and endangered plant communities.

12.14.6.3 Mouds Bog

Mouds Bog is an important and largely intact raised bog and Special Area of Conservation.

12.14.6.4 Poulaphouca Reservoir

While only a small portion of the Blessington Lakes/Poulaphouca Reservoir lies within the Kildare County boundary, this is a part of a large Special Protection Area in County Wicklow and is fed by the River Liffey and the adjoining Wicklow Mountains.

12.14.6.5 Bog of Allen

Bog of Allen this is a very extensive area that extends from Monasterevin, Rathangan, Allenwood and Prosperous in the south northwards to Johnstown Bridge, Moyvalley and Broadford in the north and it extends further west into County Offaly (south of Edenderry). Due to the intensive industrial scale turf cutting operations of Bord Na Mona over the past 70 years, the remnants of intact raised bog habitat throughout its former range has greatly diminished yet there are still a number of important areas such as Ballynafagh Bog (SAC), Ballynafagh Lake (SAC), Carbury Bog (NHA), Hodgestown Bog (NHA), Staplestown Bog (pNHA) and Ballina Bog (pNHA) in addition to a number of smaller 'left over' areas of prime bogland habitat. The area also includes

the Lullymore Heritage and Discovery Park, the Irish Peatland Conservation Council (which manages Lodge Bog, a Butterfly Reserve at Lullymore West and that Bog of Allen Nature Centre in Lullymore). Even where intensive scale peat extraction has occurred, many areas are characterised as wetlands, important in regulating water runoff and these and other areas have demonstrated a certain natural resilience and are naturally re-wilding and forming very important habitat in the form of species rich open areas or first generation woodland (scrub-woodland comprised of birch, sally, alder, buckthorn including purging buckthorn and pine) that are very rich in species diversity – wildflowers, moths, butterflies, insects, birdlife and mammals.

In 2020, Bord Na Mona announced an end to peat extraction throughout its estate of some 86,878 hectares nationally and in line with Environmental Protection Agency measures it is required to prepare a plan for the permanent rehabilitation of the cutaway boglands within its licensed area. Rehabilitation may comprise of stabilisation of bogs, with natural colonisation with or without targeted management.

Bord Na Mona has also embarked on a programme of Peatlands Enhanced Decommissioning, Rehabilitation and Restoration Scheme (also known as Peatlands Climate Action Scheme – PCAS) – supported by the Climate Action Fund, administered by the Department of Environment, Climate and Communications (DECC), while the National Parks and Wildlife Service (NPWS) will act as the Scheme regulator. To date, 6 bogs within County Kildare have been selected for the programme of Peatlands Enhanced Decommissioning, Rehabilitation and Restoration – including parts of Timahoe North, Timahoe South, Ummeras Bog, Lodge Bog, Ticknevin and Ballydermot Bog. The works planned will create large areas of new and semi-natural habitats, such as reed swamp, poor fen, wet woodland, heath, scrub and embryonic sphagnum rich raised bog peatland.

While Bord Na Mona has clear intentions of developing extensive areas to meet government renewable targets – in the form of wind and solar farms - nonetheless, the Bog of Allen represents a unique opportunity for nature based solutions on a grand scale to address the national biodiversity crisis and climate change mitigation.

Within the Bord Na Mona landownership complex there will be a need to develop a separate masterplan that will identify its own Core Areas, Stepping Stones and Connections/Corridors. This masterplan should, at a minimum, include the following 'core areas' with appropriate buffer zones of scale designed to protect their special interest and setting – one should centre around Lullymore Heritage Park, Lullybeg Wetlands, Butterfly Reserve, Lodge Bog – a second core area would focus on Ballynafagh Bog, Ballynafagh Lake and Hodgestown Bog; a third area would focus on Killinthomas Wood (Coillte owned), Ballydermot Bog East; a fourth would focus on Ummeras. Each of these would be connected either through the Grand Canal Greenway or the Barrow Blueway/Slate River and/or new and broad Peatway Corridors (the Connectors) and elsewhere there will be other 'stepping stones' in the form of key wetlands, intact raised bogs, woodlands, etc. A number of proposed long distance peatways that could connect the Royal Canal with the Grand Canal/Barrow Blueway are listed below in Section 12.14.8.8.

12.14.6.6 Kilberry Bog

Although this is an industrially harvested peatland, it is geographically more isolated than the Bog of Allen peatlands and has commenced a natural regeneration process. While other new uses like energy production may be sought on the site, it is important that a substantial are of the site is retained open, natural and free from development in the future (i.e., 50% or more).

12.14.6.7 Narraghmore Bog

Similar to Kilberry Bog, this is a Bord Na Mona owned bog that is currently a Nature Reserve; given its smaller size and geographical isolation, it should be maintained free from development.

12.14.6.8 Ummeras Bog

This area is proposed to form part of the National Peatlands Park, which is supported by the Council.

12.14.6.9 The Six Hills

North of Kildare Town and east of Rathangan there are six distinctive elevated hill-top areas that provide panoramic views north across the Bog of Allen and southwards over the Curragh, Pollardstown Fen, Moud's Bog and countryside beyond. These hills comprise of:

- Crosspatrick Hill
- The Hill of Allen
- Boston Hill
- Grange Hill
- Dunmurray Hill, and
- Red Hill.

Given their close proximity and their elevated nature, there is an opportunity to link these areas as a Green Infrastructure Core Area, maintaining relatively free from development and ensuring any future development proposals are carefully considered and managed as with all areas identified as part of the overall GI network.

12.14.6.10 The River Barrow

The River Barrow SAC is very large and is the most extensive SAC within County Kildare. The River Barrow is the 2nd longest river in Ireland, and this SAC extends over 192 km from the Slieve Bloom Mountains SPA/NHA through 5 counties to the Waterford Estuary SAC. It has significant migrations of a number of fish species between the marine and freshwater habitats and 23 separate habitats/species listed as qualifying interests. It is the only SAC within County Kildare that is specifically designated for salmon, lamprey species and otter.

12.14.7 Nodes/Stepping Stones:

The key nodes in the County include the following features:

- Wetlands
- NHAs, pNHAs, SPAs and SACs outside of the 'Core Areas' (above)
- All native and mixed woodlands, such as those in State/Coillte ownerships (such as Donadea Wood, Mullaghreelan, Moore Abbey, etc.);
- Protected demesne landscapes such as Carton and Castletown House and attendant demesnes – including the avenues/vistas towards the Wonderful Barn and the Conolly Folly, Obelisk.
- Coillte Forestry Areas (commercial plantations);
- Larger public parks (existing and proposed), such as St. Catherine's Park, Kerdiffstown Park, Sallins Amenity Park, and Oldtown Demense/DeBurgh's.
- Racecourses (such as Punchestown, the Curragh and Naas); and
- Disused and abandoned quarry pits where re-wilding and natural regeneration has occurred or may form part of a remediation plan in line with this plan.

12.14.8 The Corridors (Connections)

12.14.8.1 The River Liffey Corridor

The River Liffey Corridor enters Kildare County Council via the Poulaphouca Reservoir (a designated Special Protection Area – a core area just outside the plan area in County Wicklow) – it runs eastwards to Ballymore Eustace and into Kilcullen, before meandering northwest into Newbridge and from there it heads northeast immediately west of Sallins, north to Clane and northeast through Straffan, Celbridge and Leixlip and into Dublin City. It serves 8 towns and villages in the County.

12.14.8.2 The River Barrow Corridor

The Slate and Figile Rivers start in County Kildare and join in County Offaly to form the Barrow River which flows along the eastern County boundary through Monasterevin, Athy and south to Carlow eventually leading joining the Nore River north of New Ross.

12.14.8.3 The Grand Canal

The Grand Canal runs southwest from Dublin City (South) to Sallins, where it splits with its main line heading westwards to Edenderry and beyond and a second arm that runs from Sallins south to Naas and ending at Corbally Harbour (approx. 8km south of Naas).

From Robertstown the Grand Canal splits again with another southern arm that runs from Lowtown (Robertstown) south to Rathangan and Monasterevin where it links up with the Barrow waterways.

12.14.8.4 The Royal Canal

The Royal Canal runs from Dublin (North) westwards serving Leixlip, Maynooth and Kilcock and continues to Mullingar and Longford.

12.14.8.5 The Lyreen & Rye Rivers

The Lyreen River in the north of the County flows through Maynooth and joins the Rye River that commences east of Kilcock and runs east to Leixlip before joining the River Liffey.

12.14.8.6 The Blackwater

This river commences c. 9 kilometres south of Enfield and runs north towards Longwood and feeds the River Boyne.

12.14.8.7 The Morel River

This river commences near Punchestown and runs east of Naas and Kerdiffstown and north to join the River Liffey just south of Straffan. For the Rivers Liffey and Barrow, the GI River Corridor should, generally, be kept free from development (unless it is a proposal of significant public benefit in terms of utilities or recreational amenities) and as such a minimum set-back is proposed of 250m for any future development proposal (or greater if the areas are within a recognised floodplain/OPW CFRAMs Maps) for areas outside of zoned areas. For the other river and canal corridors, the GI River Corridor should, generally, be kept free from development (unless it is a proposal of significant public benefit in terms of utilities or recreational amenities, or an appropriate tourism initiative as determined by the Planning Authority) and as such a minimum set-back is proposed of 50m for any future development proposal (or greater if the areas is within a recognised floodplain/OPW CFRAMs Maps) for areas outside of zoned areas.

12.14.8.8 Peatways

As part of the Green Infrastructure Strategy, it is proposed to provide a number of 'Peatway Corridors' that would seek to maintain some degree of connectivity and continuity throughout the Bog of Allen and would seek to connect natural areas of raised bog with naturally regenerating areas and in so doing it would provide for long distance amenity and recreation routes with very significant tourism potential. A number of routes have been selected – based on the route of Bord Na Mona private roads, but mostly on the former industrial railway lines that criss-cross the Bog of Allen but with the intention of establishing broader Countywide Green Infrastructure links to connect the Royal Canal with the Grand Canal. Rather than just developing a singular 'peatway trail' for walkers, it is envisaged that these would be substantial landscape corridors of c. 1 - 2 kilometres wide (i.e. 500m - 1000m either side of the railway or pedestrian trail), that will provide connections for amenity, ecology/ecosystem services.

The Peatway Trails and Corridors will provide a strategically planned network of natural and semi-natural areas (bogs and rewilded areas) with other environmental features (such as re-wetted peatlands, wetlands, lakes and ponds) designed and managed to deliver a wide range of ecosystem services such as air quality, space for recreation and climate mitigation and adaptation. They will also provide important wildlife corridors and will be free for energy infrastructure such as solar farms and wind turbines.

There are three primary Peatway Corridors proposed:

1. From Rathangan Town/Killinthomas Wood north to Ticknevin (where it will meet the Grand Canal Corridor) – with an option for a link to Edenderry via the Derries (subject to co-operation and consideration with Offaly County Council).
2. From Rathangan/Killinthomas to Lullymore (linking the Grand Canal Corridor) and from there to Allenwood North (Allenwood Community Development Association Ltd.) and continuing north via Timahoe Bog (Timahoe West) and onto the townland of Doogary/Cooltree a few kilometres south of Johnstown Bridge/Enfield and the Royal Canal Greenway.
3. From Edenderry to Carbury Bog following the path of the former disused railway line and from there north to Martinstown/Blackwater Aquaduct on the Royal Canal Greenway.

12.14.8.9 The East Kildare Uplands Corridor

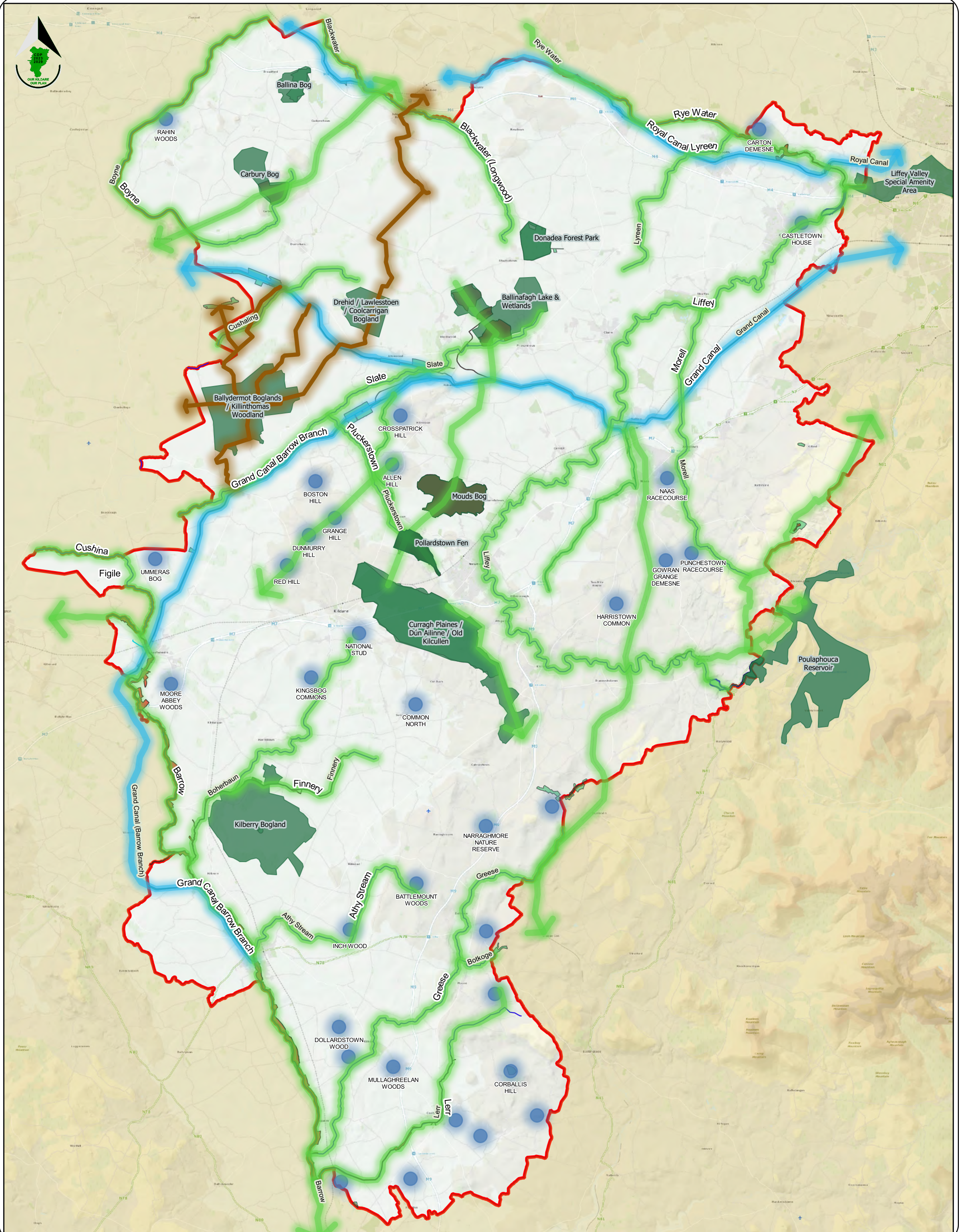
This corridor builds on the South Dublin County Council corridor (refer to the South Dublin County Development Plan 2022-28) that runs south to Saggart Hill (close to the Kildare County border) and continues it southwards to Blessington and the Poulaphouca Reservoir – following the ridge line that generally divides parts of Kildare to the west and Wicklow to the east.

It includes some of the most elevated areas of the County with significant views over the plains of Kildare to the west and views of the Wicklow Mountains and Poulaphouca Reservoir to the east. This proposed GI Corridor includes, for example Cupidstown Hill - Kildare's highest point, Rathbane, Caureen (public right of way along the ridge line) and leads southwards to incorporate the Red Bog SAC (including ponds – a wildlife hotspot) and links up with the Glending Wood/Deerpark (County Wicklow). Subject to the cooperation of Wicklow County Council, the GI Corridor could then follow the local stream and associated ponds that run to the east of Blessington, through Kilmalum (Kildare) before entering Poulaphouca Reservoir (SPA). From Glending Wood, the corridor so is proposed to run through the elevated townlands of Newtown Park, Slieveroe, Glenmore, Carrigeen, Russborough Demense and reconnecting again with Poulaphouca Reservoir.

In addition to the features highlighted above, this GI Corridor includes a number of woodland and commercial forestry areas as well as a significant number of active and disused quarries, where after use activity should promote uses compatible with Green Infrastructure Strategy.

12.14.8.10 Disused Tullow Railway Line

This corridor extends from south of Naas to Grangebegg/Tober Lower just north of Dunlavin (County Wicklow).

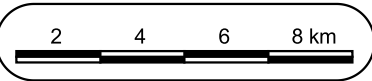


Legend

- County Boundary
- Blueways / Greenways
- Core Areas
- Special Areas of Conservation (SAC)
- Stepping Stones
- Special Protection Areas (SPA)
- Green Corridors
- Proposed Natural Heritage Areas (pNHA)
- Peatways
- Natural Heritage Areas (NHA)



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**County Development
 Plan 2023-2029**

**Green Infrastructure
 Concept Map**

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

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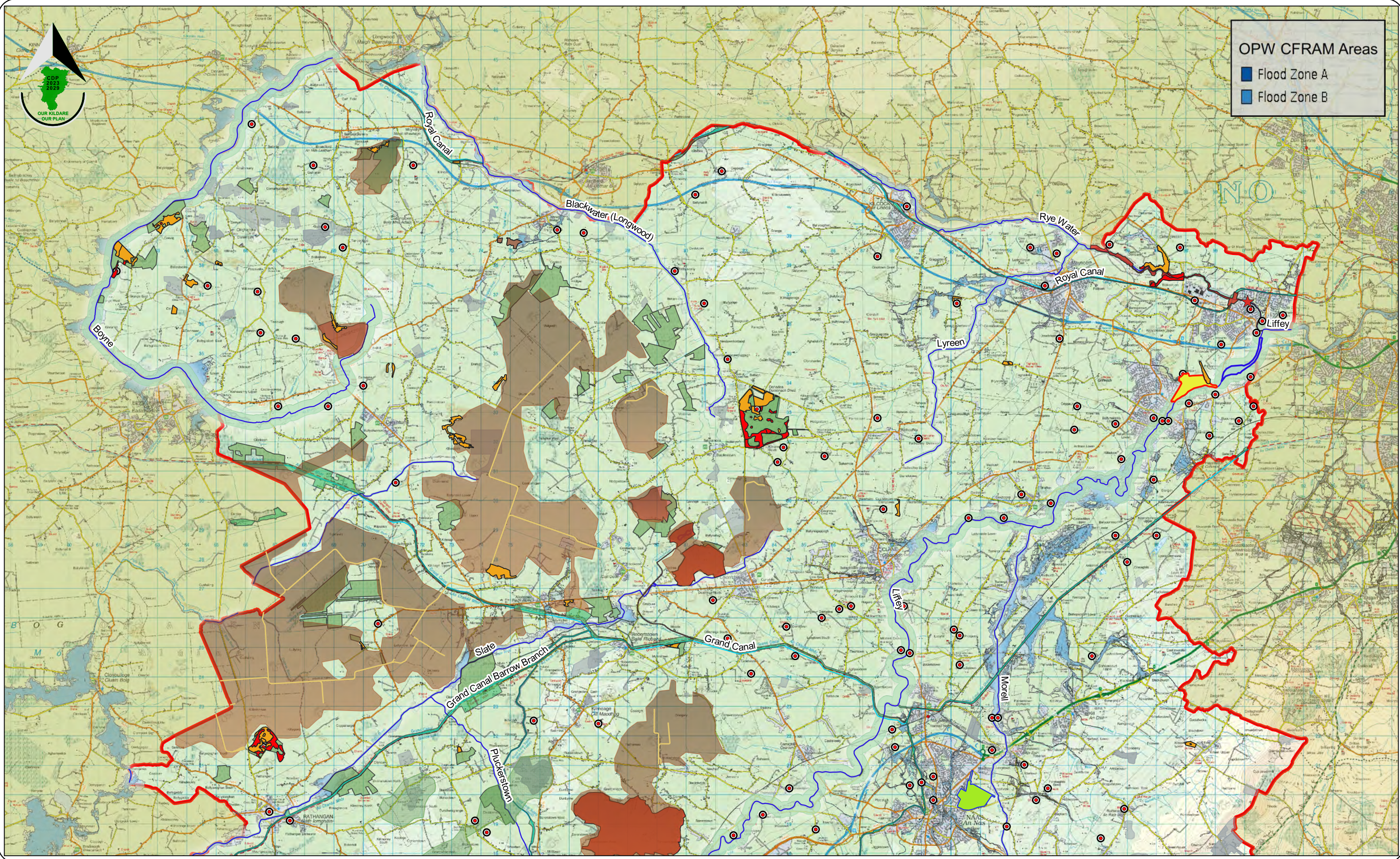
Date: January 2023 Drawing No.: 200/22/1357

Drawn By: M O'Loughlin
 Date: 28/01/2023

Checked By: L Crawford
 Date: 28/01/2023

Approved By: C O'Donnell
 Date: 28/01/2023

This drawing is to be read in conjunction with the written statement



OPW CFRAM Areas

- Flood Zone A
- Flood Zone B

Legend

- County Boundary
- Special Areas of Conservation (SAC)
- Natural Heritage Area (NHA)
- Proposed Natural Heritage Area (pNHA)
- Special Protection Areas (SPAs)
- Bryophytes Location (NPWS)
- National Survey of Native Woodlands (NPWS)
- Ancient Long Established Woodland (NPWS)
- Commonage Areas (NPWS)
- Equine Sites
- Coillte Woodland
- Kildare County Council Parks
- Castletown House OPW
- Peat Bogs / Wetlands
- Quarries (active and disused)
- NIAH Survey of Historic Gardens and Designed Landscapes
- Bord na Móna Rail Network
- Important Hills
- Tree Preservation Orders
- River Buffer Areas
- Canal
- River
- Lake

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1 2 3 4 5 km

County Development Plan 2023-2029

Green Infrastructure Kildare North

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

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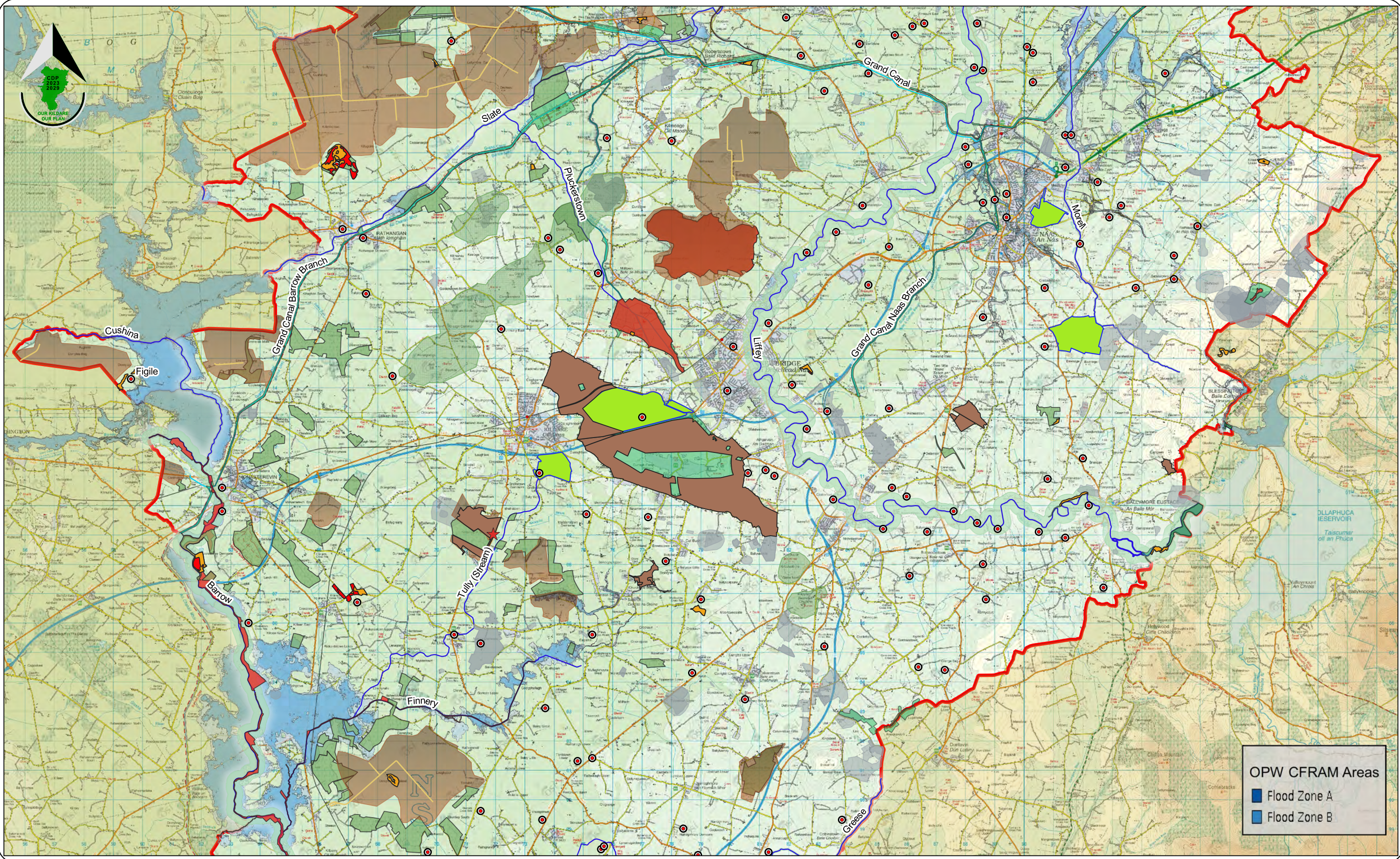
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Date: January 2023 | Drawing No.: 200/22/1357

Drawn By: M O'Loughlin | Checked By: L Crawford | Approved By: C O'Donnell

Date 21/01/2023 | Date 21/01/2023 | Date 21/01/2023

This drawing is to be read in conjunction with the written statement



OPW CFRAM Areas

- Flood Zone A
- Flood Zone B

Legend

- County Boundary
- Special Areas of Conservation (SAC)
- Natural Heritage Area (NHA)
- Proposed Natural Heritage Area (pNHA)
- Special Protection Areas (SPAs)
- Bryophytes Location (NPWS)
- National Survey of Native Woodlands (NPWS)
- Ancient Long Established Woodland (NPWS)
- Commonage Areas (NPWS)
- Equine Sites
- Coillte Woodland
- Kildare County Council Parks
- Castletown House OPW
- Peat Bogs / Wetlands
- Quarries (active and disused)
- NIAH Survey of Historic Gardens and Designed Landscapes
- Bord na Móna Rail Network
- Important Hills
- Tree Preservation Orders
- River Buffer Areas
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- River
- Lake

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1 2 3 4 5 km

County Development Plan 2023-2029

Green Infrastructure Kildare Middle

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

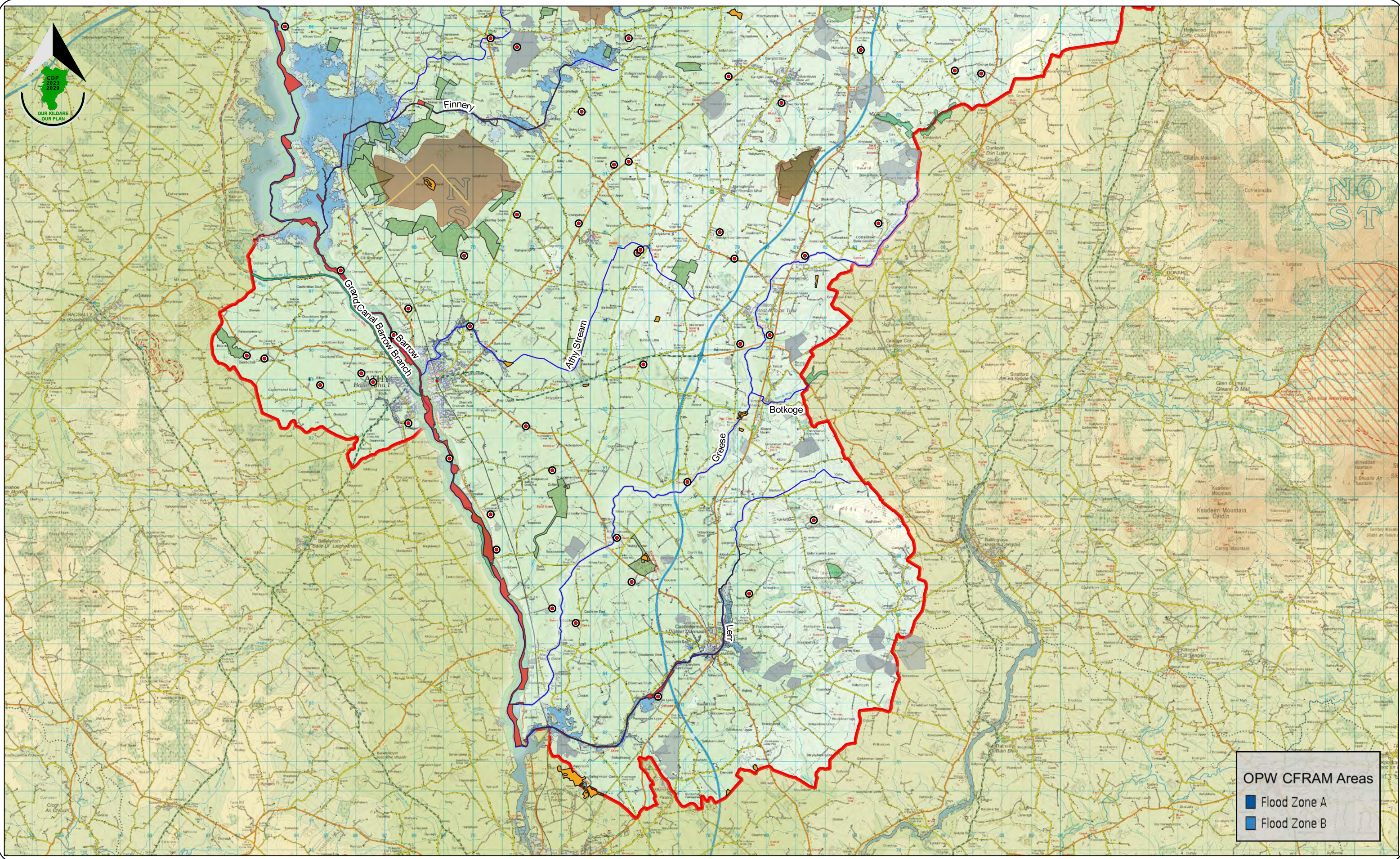
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Scale: N.T.S. Map Ref: V1-12.5

Date: January 2023 Drawing No.: 200/22/1357

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 Checked By: L Crawford Date 28/01/2023
 Approved By: C O'Donnell Date 28/01/2023

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Legend

- County Boundary
- ★ Bryophytes Location (NPWS)
- Equine Sites
- National Survey of Native Woodlands (NPWS)
- Coillte Woodland
- Kildare County Council Parks
- Ancient Long Established Woodland (NPWS)
- Commonage Areas (NPWS)
- Special Areas of Conservation (SAC)
- Castletown House OPW
- Peat Bogs / Wetlands
- Quarries (active and disused)
- NIAH Survey of Historic Gardens and Designed Landscapes
- Important Hills
- Tree Preservation Orders
- River Buffer Areas
- Canal
- River
- Lake
- Bord na Móna Rail Network

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435

1 2 3 4 5 km

County Development Plan 2023-2029

Green Infrastructure Kildare South

Stage	Date	Description
County Development Plan	28/01/2023	Date the Plan comes into effect
County Development Plan	09/12/2022	Plan adopted by Elected Members

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12.14.9 Urban Green Infrastructure

Green Infrastructure within urban areas provides valuable connections from the urban centres to the wider countryside thereby strengthening the Green Infrastructure Network. Urban Green Infrastructure potentially includes residential gardens, the parkland settings of enterprise parks and employment areas, street verges, open spaces and parks, woodlands, hedgerows, cemeteries and allotments.

All of these areas collectively contribute to a strengthened Green Infrastructure network and to the benefits afforded to urban areas such as the greening of our urban areas, the creation of attractive open spaces, providing local distinctiveness and better health and human well-being. Biophilia is that innate love and genetically determined affinity of human beings with the natural world. The biophilia hypothesis proposes that we long for nature and without connecting to it, our health would suffer. Biophilic design is an applied solution to appease this desire for nature by integrating natural elements and processes into the built environment.

Policy

It is the policy of the Council to:

BI P13	Recognise the importance of Urban Green Infrastructure in addressing a broad range of urban challenges, such as connecting people with nature, adapting to climate change, supporting the green economy and improving social cohesion and to seek to protect and enhance this resource, particularly existing semi-natural areas, or habitats (such as hedgerows, canals, rivers, ponds).
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Objectives

It is an objective of the Council to:

BI O70	Ensure that the Green Infrastructure Strategy and Network identified in this County Development Plan and Local Area Plans is used to inform the development management process to ensure that new residential areas, business/ industrial development tourism and other relevant projects contribute towards the conservation and protection of Kildare's habitats and species, and the protection, management and enhancement of the existing Green Infrastructure in terms of design, layout and landscaping.
BI O71	Identify existing Green Infrastructure at the initial stages of the planning process and to use this information to guide the overall design of an appropriate site layout which is reflected in the developments landscaping plan. The landscaping plan submitted with an application should clearly illustrate how existing Green Infrastructure, and opportunities to create more linkages, have informed and been incorporated into the development, layout and, if appropriate, management proposals
BI O72	Ensure that the design of new development does not cause fragmentation of the Green Infrastructure network.
BI O73	Encourage the use and incorporation of Biophilic design into all new development schemes, increasing proximity of and/or views to nature, landscape and landscape features, in the interests of public health.

12.14.10 Green Infrastructure within Public Open Spaces and Parks

Local networks of high quality, well managed and maintained open spaces, sports and recreational facilities help to enhance the urban environment, contribute to a high-quality living environment and strengthen the Green Infrastructure network in the county. These areas provide habitats for ecological processes, a focal point for active and passive recreation, promote community interaction and help mitigate the impacts of climate change.

The Kildare Open Space Strategy was prepared to inform this Plan and has identified a hierarchy of open space within the county (See Chapter 13 and Appendix 3).

Policy

It is the policy of the Council to:

BI P14	Protect and enhance the Green Infrastructure network throughout the county
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Objectives

It is an objective of the Council to:

BI O74	Strengthen ecological networks between urban areas to create greater linkages to Natura 2000 sites, proposed Natural Heritage Areas, parks and open spaces and the wider regional Green Infrastructure network.
BI O75	Require multifunctional open space provision within all new developments; this includes provision for ecology and sustainable water management.

12.14.11 Green Infrastructure and Sustainable Urban Drainage Systems

Sustainable Urban Drainage Systems (SuDS) drain surface water in an environmentally friendly way by replicating natural systems in managed environments. SuDS systems seek to collect, store and release surface water back to the environment using natural systems in a slow and controlled way, thereby reducing the risk of fluvial and pluvial flooding. SuDS represents a critical move away from the conventional practice of piping all surface water directly to the nearest watercourse or river towards an approach where water is either infiltrated or conveyed more slowly to water courses via constructed wetlands, permeable surfaces, filter strips, ponds, swales and basins, all of which contribute to more environmentally friendly and aesthetically pleasing methods of controlling surface water.

A Nature Based solutions approach to SuDS (or Natural Water Retention Measures) has come more into prominence, in response to the water, climate and biodiversity crisis. The benefits of taking a nature-based approach includes not just flood risk management benefits, but also improved water quality (e.g. can filter out >80% heavy metal pollutants), biodiversity (e.g., provide habitat for range of species) and Climate adaptation and mitigation (resilience, micro-climate cooling, carbon sequestration, etc.). Nature-based solutions are critical in climate change adaptation; they can play an important role not only for biodiversity and ecosystems, flood prevention and carbon

sequestration, but also in temperature regulation, water quality, erosion prevention, and filtering pollutants from the air and water. Nature-based solutions are used in a smart, 'engineered' way to provide sustainable, cost-effective, and adaptable measures that support climate resilience.

Kildare County Councils Climate Change Adaptation Strategy 2019-2024; Climate Resilient Kildare identifies a number of objectives and actions for which green infrastructure and nature-based solutions have a role to play. This includes the incorporation of green infrastructure, including urban greening into the design, planning and construction of roads, community, and public realm projects, and as a mechanism to promote biodiversity, reduce habitat fragmentation, and for carbon offset.

Policy

It is the policy of the Council to:

BI P15	Promote and support the development of Sustainable Urban Drainage Systems (SuDS) to ensure surface water is drained in an environmentally friendly way by replicating natural systems.
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Objectives

It is an objective of the Council to:

BI O76	Promote and support the development of Sustainable Urban Drainage Systems (SuDS) such as integrated constructed wetlands, permeable surfaces, filter strips, ponds, swales and basins at a site, district and county level and to maximise the amenity and bio-diversity value of these systems.
BI O77	Integrate nature-based solutions and climate change considerations into the design, planning, and implementation of infrastructure provision/ works and development proposals at the earliest possible stage of the design process.
BI O78	Actively promote and encourage nature-based approaches and green infrastructure solutions as viable mitigation and adaptation measures to surface water management.
BI O79	Promote the provision of Green Roofs and/ or Living Walls in developments where expansive roofs are proposed.

Action

It is an action of the Council to:

BI A32	Showcase good examples of Sustainable Urban Drainage Systems (SuDS) which maximise amenity and biodiversity through the use of systems such as (but not limited to) swales, rain gardens as part of local authority developments.
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