

Meath County Development Plan 2021-2027

Strategic Environmental Assessment (SEA) Non-
Technical Summary (Volume 1)

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Environmental Assessment **Built Environment**

Client:

Meath County Council

Date:

November 2021

DOCUMENT CONTROL SHEET

6377_RP-01_Strategic Environmental Assessment (SEA) Non-Technical Summary (Volume 1)

Project No. 6377

Client: Meath County Council

Project Name: Meath County Development Plan 2021-2027

Report Name: Strategic Environmental Assessment (SEA) Non-Technical Summary (Volume 1)

Document No. RP-01

Issue No. 01

Date: November 2021

This document has been issued and amended as follows:

Issue	Status	Date	Prepared	Checked
01	SEA Non-Technical Summary - Plan	November 2021	Rebecca Dunlea	Thomas Burns



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1 Non-Technical Summary (NTS)

1.1 Introduction

Meath County Council (MCC) has prepared a new County Development Plan for County Meath - the Meath County Development Plan (CDP) (2021-2027) ('Plan'). The Plan will replace the current Meath County Development Plan 2013-2019.

The Plan is a strategic document setting the vision and direction for the future development of County Meath for the benefit of all its citizens up to 2027, which will shape the future development of the county and will identify zones where different land uses are considered to be appropriate.

The preparation of the Plan was required to undergo a Strategic Environmental Assessment (SEA), including the preparation of an SEA Environmental Report, in accordance with Directive 2001/42/EC and associated implementing national legislation on the Assessment of the Effects of Certain Plans and Programmes on the Environment¹ (known as the SEA Directive).

The purpose of the Environmental Report is to evaluate the *likely environmental effects* of the Plan and the alternatives, and to have their significance evaluated with regard to the environmental baseline. This will provide stakeholders and the public with a clear understanding of the likely environmental consequences of implementing the Plan.

The Plan and associated SEA Environmental Report was available for comment from statutory bodies, the public and interested parties during the public display period. The content of any submissions or observations received as part of the public display / consultation stage informed the finalisation of the Plan and of the associated SEA process.

The preparing of the Non-Technical Summary (NTS) (Volume 1) and the Strategic Environmental Assessment (SEA) (Volume 2) has been undertaken by Brady Shipman Martin, Environmental, Landscape and Planning Consultants on behalf of Meath County Council. The purpose of this report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan.

1.1.1 What is included in the SEA Environmental Report?

- A description of the environment and the key environmental issues.

¹ EC (2001). DIRECTIVE 2001/42/EC

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

2 Strategic Environmental Assessment (SEA) Process

2.1 What is SEA?

Strategic Environmental Assessment (SEA) is the process by which environmental considerations are required to be fully integrated into the preparation of plans and programmes prior to their final adoption. The objectives of SEA are to provide for a high level of protection of the environment and to promote sustainable development².

SEA enables the planning authority to direct development towards robust, well-serviced and connected areas in the County, thereby facilitating the general avoidance of incompatible areas in the most sensitive, least well-serviced and least well-connected areas.

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

2.2 Steps in the SEA Process

Table 2.1 highlights the four key stages in the SEA process and the progress made to date.

Table 2.1: Key Stages in SEA

Stage	Description	Status
1. Screening	Screening will determine if SEA is required.	Completed ✓
2. Scoping	Determines the spatial and temporal scope of the SEA in consultation with the designated statutory consultees.	Completed ✓
3. Environmental Report	Formal and transparent assessment of the likely significant impacts on the environment due to implementation of a Plan / Programme including all reasonable alternatives. The output from this stage is an Environmental Report which is required to go on public display along with the draft Plan / Programme.	Completed ✓
4. SEA Statement	Summarises the process undertaken and identifies how environmental considerations and consultations have been integrated into the final Plan / Programme.	Current Stage

² Environmental Protection Agency (EPA) (2021). *Strategic Environmental Assessment*.

2.3 Scoping (Stage 2)

The Scoping Stage (Stage 2) ensures that the SEA is focused on the relevant environmental issues and examines issues at the appropriate level of detail. Scoping also includes consultation with the Environmental Authorities, and allows for the incorporation of the views of the Environmental Authorities within the Plan / Programme and the SEA Environmental Report.

2.4 SEA Environmental Report (Stage 3)

The SEA Environmental Report (Stage 3) and is the main assessment and written output of the SEA process. Consultation submissions received the SEA Scoping Stage (Stage 2), have been considered in the Plan and the assessment process.

The SEA Environmental Report (Volume 2) predicts and evaluates the *likely significant effects* of the Plan and the alternatives. The Environmental Report provides MCC, stakeholders and the public with a clear understanding of the likely environmental consequences of implementing the Plan. The SEA Environmental Report considers all of the following in accordance with the requirements of the SEA Directive:

1. Biodiversity (Flora & Fauna);
2. Population & Human Health;
3. Soil and Geology;
4. Water Quality;
5. Air, Noise and Climate;
6. Landscape;
7. Material Assets;
8. Cultural Heritage; and
9. Interaction and Cumulative Impacts.

Table 2.2 summarises the content of the SEA Environmental Report (Volume 2). In the first instance, the SEA Environmental Report details the current condition of the environment of the study area under each of the sub-headings set out above. The SEA Environmental Report also summarised the significant environmental pressures that may affect each of the environmental topics and the current (baseline) condition of the environment.

Table 2.2: Content of the SEA Environmental Report

No.	Chapter	Description
1	Introduction	A brief introduction to the SEA Environmental Report.
2	Meath County Development Plan 2021-2027	A description of the County Development Plan (Plan) and a summary of its key policies and objectives.
3	Methodology	The steps taken in preparation of the SEA, including the methods used and technical difficulties encountered.
4	Review of relevant Policies, Plans and Programmes	The relationship of the Plan to other relevant plans and programmes is highlighted.
5	Environmental Baseline	A description of the current environment of the area of the Plan is given, highlighting any existing environmental problems. This exercise results in a baseline against which the likely effects of implementing the Plan can be examined.
6	SEA Objectives, Targets & Indicators	A number of environmental protection objectives which have been established at international, EU or national Level and are relevant to the Plan are listed. Following this, a description of how the objectives and any environmental considerations have been taken into account in the preparation of the Plan is given.
7	Description of Alternatives	An assessment of the proposed alternatives to the Plan are considered at this stage.
8	SEA: Meath County Development Plan	An examination of the Plan policies and objectives in terms of their potential effects on the various environmental parameters.
9	Mitigation Measures	Should potentially significant effects be discovered, measures to avoid, reduce or offset these effects are proposed and integrated into the Plan.
10	Monitoring Programme	Proposals for monitoring the significant effects of the Plan on the environment are put forward. A number of indicators of change and targets are identified and existing monitoring arrangements are utilised.
11	Conclusion	A conclusion with regard to the overall potential impact on the environment resulting from the implementation of the Plan.

2.5 SEA Statement (Stage 4 - Current Stage)

During Stage 4 of the SEA process, Meath County Council will publish a *SEA Statement* alongside the final adopted Meath County Development Plan (2021-2027) (together with the updated SEA

Environmental Report and Natura Impact Report (NIR)) setting out how the SEA and any consultation responses have influenced the Plan.

The SEA Statement also includes the measures decided upon to *monitor the significant environmental effects* of implementing of the Plan.

2.6 Screening for Appropriate Assessment (AA)

A Screening Stage for ‘*Appropriate Assessment*’ (AA) (Stage 1) has been undertaken for the Plan. The need for Appropriate Assessment arises out of the Habitats Directive³ (on the conservation of natural habitats and of wild fauna and flora), which requires that proposed plans and programmes⁴ undergo a screening test for *likely or potential effects* on European Sites (also known as the Natura 2000 network) arising from their implementation.

The screening has concluded that due to the types of development that could arise as a result of implementing the Plan, that significant effects could not be ruled out and that the Plan would need further assessment during its preparation.

Therefore, a Stage 2 Appropriate Assessment was required and a Natura Impact Report (NIR) has been prepared in parallel with the preparation of the Plan and the SEA Environmental (Volume 2). The NIR has been updated and finalised in taken with the completion and adoption of the Plan.

2.7 Screening for Strategic Flood Risk Assessment (SFRA)

A Strategic Flood Risk Assessment (SFRA) was also undertaken for the preparation of the Plan. The requirement for SFRA is provided under ‘*The Planning System and Flood Risk Management Guidelines for Planning Authorities*’.

The preparation of the Plan, Strategic Flood Risk Assessment, Strategic Environmental Assessment and Appropriate Assessment have taken place concurrently and the findings have informed both the Plan and the SEA.

2.8 Consultation

MCC gave notice of its intention to review the existing Development Plan (2013-2019) and to prepare a new Plan for the period 2021-2027 in 2017.

³ 92/43/EEC

⁴ including amendments or variations to Plans and programmes

Pre-draft consultation stage was held from 14 December 2016 to 17 February 2017. During this time, an Issues Paper was published and six consultation events were held around the County.

The consultation comprised the following elements:

- Events were held in the following Municipal Districts: Ashbourne, Kells, Laytown / Bettystown (Duleek Civic Office), Navan, Ratoath (Dunshaughlin Civic Office) and Trim during the week 30 January 2017 to 3 February 2017.
- The events were informal in nature. Members of the public were invited to review the Strategic Issues paper, which was presented on notice boards at each venue, and were encouraged to discuss any issues with the exception of zoning matters with planning staff.
- Each event was held over a duration of two hours. The information events were well attended with the highest attendance recorded in Laytown / Bettystown and Ashbourne.

A website was set up for the review of the Meath County Development Plan, www.countydevelopmentplanreview.meath.ie which had in excess of 7,000 'hits' or views during the public consultation period.

For the first time as part of a County Plan review process, a facility was made available to accept submissions online.

As part of the SEA process, consultation on the content of the SEA Environmental Report was undertaken with the specified environmental authorities, including the EPA, various governmental departments and surrounding local authorities.

2.8.1 Consultation on the Draft Plan and SEA Environmental Report

In line with SEA Regulations, the Draft Plan, together with the SEA Environmental Report, and Natura Impact Report (NIR) and Strategic Flood Risk Assessment (SFRA) were made available to the public and the stakeholders.

Some 2,542 submissions were received during this Draft Plan consultation period, with three submissions subsequently withdrawn.

The extent and detail of the submissions and observations received highlighted the significant level of public interest in the plan-making and assessment process.

2.8.2 Proposed Material Amendments Consultation

Consultation on the Proposed Material Amendments to the Draft Meath County Development Plan 2021-2027 together with associated Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) Determinations and Reports was carried out for a period of four weeks from 31 May 2021 to 29 June 2021 inclusive.

A total of 308 no. submissions were received within the consultation period.

3 Meath County Development Plan

3.1 Introduction

The current Plan is the Meath County Development Plan 2013-2019. MCC has prepared a new Plan 2021-2027, which will replace the current Plan.

The Plan is a land use plan and overall strategy for the proper planning and sustainable development of the functional area of County Meath over a six-year period.

3.1.1 Geographical Area of the Plan

The administrative area of Meath covers an area of over 230,000 hectares and is the second largest county in Leinster. It adjoins Dublin to the south and this geographical proximity and the strong functional relationship between the two counties results in Meath being a vital supporting partner in the recent growth of the Greater Dublin Area. This locational advantage has enabled the county to play a major part in the development of the National Gateway, the nation's most economically dynamic and progressive area.

Meath has a network of attractive towns, villages and the rural area. It possesses a diverse range of landscapes, including 10km of coastline, the drumlin hills of north Meath, rich pastures, tracts of peatland and raised bog in the southwest and the central upland area that includes Tara - the ancient capital of Ireland.

The County benefits from a wealth of natural and man-made resources. It is supported by a well-developed road and rail infrastructure system which provides access to international transport networks at Dublin Airport and Dublin Port and the remainder of the country. The fertile soils provide the basis for a thriving agricultural and food sector, and the natural and built heritage enhances the quality of life for the people of the county and has long enticed visitors to Meath.

3.2 Content of the Plan

The Plan is set out in a series of volumes and comprises a written statement that outlines the development policies and objectives for the Plan area and the Core Strategy. The Written Statement is accompanied by maps, settlement plans, the SEA Environmental Report, a Natura Impact Report (NIR), a Strategic Flood Risk Assessment (SFRA) and other supporting appendices.

The Core Strategy, sets out how the objectives in the Plan are consistent with national and regional development objectives set out in the *National Planning Framework* (NPF) and the *Regional Spatial and Economic Strategy* for the Eastern and Midlands Region (RSES). The Plan consists of:

- The Written Statement (Volume 1) - constitutes the main body of the document outlining the vision, Core Strategy, policies and objectives of the Plan.
- Settlements (Volume 2).
- Appendices.

The Written Statement (Volume 1) is divided into 11 no. separate chapters setting out various policies and objectives under the following headings:

- Chapter 1: Introduction
- Chapter 2: Core Strategy
- Chapter 3: Settlement and Housing Strategy
- Chapter 4: Economy and Employment Strategy
- Chapter 5: Movement Strategy
- Chapter 6: Infrastructure Strategy
- Chapter 7: Community Building Strategy
- Chapter 8: Cultural and Natural Heritage Strategy
- Chapter 9: Rural Development Strategy
- Chapter 10: Climate Change Strategy
- Chapter 11: Development Management Standards and Land Use Zoning Objectives

3.3 Aims and Objectives of the Plan

The aim of the **Core Strategy**⁵ is to set out an evidence based strategy for the future development and planning of the Plan area. The Core Strategy presents the medium to long-term strategy for the county. It must show that the development objectives in the Plan, are consistent as far as practicable, with national and regional development objectives.

The Core Strategy Vision of the Meath County Development Plan is:

“To continue to support the creation of socio-economically progressive vibrant, dynamic, and healthy communities throughout the County and ensure that future growth is based on the

⁵ Planning and Development Act 2000 (2020). Updated.

principles of sustainable development that delivers a high quality living and working environment that meets the needs of all residents, in accordance with National and Regional Guidance.”

The objectives of the Core Strategy are as follows:

- *‘To demonstrate how the Meath Plan is consistent with national and regional planning strategies, guidelines and policies including national and regional population targets.*
- *To provide the policy framework for the settlement strategy and Local Area Plans (LAP), particularly in relation to land use zoning and population distribution.*
- *To ensure the co-ordination of infrastructural investment with settlements identified for future growth.*
- *To facilitate the population growth of Meath up to a projected population of 227,500 in the Plan period and ensure the distribution of this population is targeted towards the growth centres identified in the RSES.’*

3.4 Monitoring and Progress

A Development Plan must be able to respond to changing circumstances within its lifetime. Regular monitoring of the relationship between the Plan and changes within a wider EU and national policy context, development pressures and varying local priorities are important if the policies and objectives are to remain effective and relevant throughout the lifetime of the Plan.

Monitoring will identify whether the Plan remains consistent with national and regional policy, and where changes occur at national and / or regional level, advise whether the Plan should be varied as necessary to ensure consistency with these higher level plans.

It is a requirement under the Planning and Development Act 2000 (as amended) for a report to be prepared, two years after the making of the plan, on the progress achieved in securing the objectives of the Development Plan.

The SEA process through the recommendation of mitigation measures, by its nature requires environmental monitoring throughout the lifetime of the 6-year Development Plan.

4 Policy Context - Policies, Plans and Programmes

The preparation of the Plan has been considered within the context of a hierarchy of policies, plans and programmes of international, national, regional and local level as detailed in Chapter 3 (Methodology) of the SEA Environmental Report (Volume 2).

The Plan must comply with relevant higher-level strategic actions and will, in turn, guide lower level strategic actions. In this instance, the Plan must comply with higher level plans including *Project Ireland 2040: National Planning Framework* (NPF). The NPF is implemented through the *Regional Spatial and Economic Strategies* (RSEs) and lower tier Development Plans and Local Area Plans.

The RSEs for the Eastern and Midlands Region sets out objectives for land use planning, tourism, infrastructure, sustainable development, environmental protection and environmental management for the Eastern and Midlands Region, that have been subject to environmental assessment and must be implemented through the Plan.

Being a county-level plan, the Plan sets the framework for lower-level plans, such as local area plans and other county and lower level plans and programmes, refer to Chapter 4 of the SEA Environmental Report (Volume 2).

Both the NPF and RSEs, as well as the majority of other and lower level plans have also been subject to the Strategic Environmental Assessment (SEA) process.

Some of the key policies, plans and programmes of key relevance to Meath County Council and the development of the County Development Plan include:

- Strategic Environmental Assessment (SEA) Directive
- EU Birds and Habitats Directive
- Water Framework Directive
- Floods Directive
- Drinking Water Directive
- Ireland's Environment - An Assessment (2020) (EPA)
- Meath Biodiversity Action Plan (MBAP) 2015-2020
- Meath Climate Action Strategy 2019-2024.

5 Environmental Baseline

5.1 Introduction

This section provides a summary of the environmental baseline of County Meath. The environmental baseline is the current state of the environment.

Baseline data will be collected for the various environmental receptors described in the SEA Directive *i.e.* biodiversity, fauna, flora, population, human health, soil, water, air, climate factors, material assets, cultural heritage including architectural and archaeological heritage, and landscape. Baseline data creates a platform whereby existing issues relevant to the Plan area can be measured, where possible, and therefore ensuring that the implementation of Plan does not aggravate these environmental issues.

The environmental baseline together with the Strategic Environmental Objectives (SEOs), refer to Section 6, is used in order to identify, describe and evaluate the *likely significant environmental* effects of implementing the Plan and in order to determine appropriate monitoring measures.

5.1.1 Likely Evolution of the Environment in the Absence of a New Plan

To date the current Development Plan has contributed towards environmental protection and sustainable development within County Meath. However, in the absence of a new Plan, it is uncertain how permission for new development would be applied for and considered.

Although higher level environmental protection, including the various EU Directives and Irish Regulations, would still apply, the decline of this framework would mean that new development would be less coordinated and controlled. Such development could result in an increase in the occurrence of *negative / adverse* effects on the various environmental aspects (*i.e.* human health, biodiversity, air quality), especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact. As a result, there is the potential for the increased likelihood in the extent, magnitude / scale and frequency of *negative / adverse* effects on all environmental aspects occurring. These include:

- Loss of / damage / fragmentation to **biodiversity** in designated sites (*i.e.* European sites) and Annexed habitats and species, listed specs, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna, due to the development of lands.

- Loss of / damage / fragmentation to existing **green infrastructure** and associated ecosystem services, ecological connectivity and non-designated habitats.
- Loss of / damage / fragmentation to **biodiversity** and **flora and fauna** that help contribute to protecting natural capital and the environmental vectors of air, water and soil.
- Habitat disturbance (due to noise, lighting etc.) and displacement of **protected species**.
- Negative / adverse impacts to **human health** as a result of damage or loss to natural capital and environmental vectors including air and water.
- Loss / damage / degradation or loss of the **hydrogeological** and ecological function of soil resources.
- Negative / adverse impacts upon the status of **waterbodies** (including **groundwater, surface water, lakes** and **coastal waters**) arising from changes in quality, flow and / or morphology.
- Not adequately treating surface water run-off that is discharged to **waterbodies** and not providing appropriate wastewater treatment.
- Increases in the risk and extent of **flooding**.
- Failure to comply with **drinking water** regulations and serve new development with adequate drinking water (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts).
- Potential negative / adverse interactions between **waste, soil, water, biodiversity** and **human health**.
- Failure to reduce **carbon emissions** in line with, national and European environmental objectives.
- Potential effects on protected and unknown **archaeology** and protected **architecture** arising from the construction and operation of development.
- Negative / adverse visual impacts and / or conflicts with the appropriate protection of designations relating to the **landscape**.
- **Waste** levels would increase.

5.1.2 Ireland's Environment - An Integrated Assessment 2020

The seventh *State of the Environment Report* published by the Environmental Protection Agency (EPA) indicates that the overall quality of Ireland's environment is not what it should be, and the outlook is not optimistic unless we significantly increase the implementation of solutions. The

environmental challenges that Ireland faces is cut across different environmental topics, such as climate, air, water and biodiversity and across organisations and all levels of society.

The COVID-19 pandemic has had a huge impact on Ireland's economy, however, the degree to which this impact will obstruct national environmental policy ambitions, including the transition to a climate-neutral economy, will be seen in the future.

5.1.3 UN Sustainable Development Goals

The Plan will contribute towards the *2030 Agenda for Sustainable Development* and the Sustainable Development Goals (SDGs).

5.2 Biodiversity (Flora and Fauna)

Biodiversity plays a significant role in the delivery of clean air, water, healthy soils and food as well as visually contributing to a plan area with its natural beauty and heritage. Ireland has a rich diversity of ecosystems and wildlife in its terrestrial / land, freshwater and marine environments. However, over the last few decades, human impacts on biodiversity have significantly increased and resulted in increased damage and loss of habitats and species⁶.

Biodiversity is vulnerable to climate change as it accelerates the destruction of the natural world through droughts, flooding and wildfires, while the loss and unsustainable use of nature are in turn key drivers of climate change. However biodiversity and nature are also vital in the fight against climate change.

Ecological networks act as corridors and stepping stones for wildlife, and are important for connecting areas of biodiversity, but also for migration and dispersal of species of flora and fauna.

Woodlands in Meath tend to be small and fragmented and are more frequent near rivers, particularly along the lower stretches of the River Boyne. Hedgerows are perhaps the most characteristic feature of the County's landscape and provide an important habitat for many species and act as a wildlife corridor in a landscape dominated by large tracts of intensive agriculture.

Hedgerows are perhaps the most characteristic feature of Meath's landscape and provide an important habitat for many species and act as a wildlife corridor in a landscape dominated by large tracts of intensive agriculture.

⁶ Department of Culture, Heritage and the Gaeltacht (DCHG) (2017). *National Biodiversity Action Plan 2017-2021*.

Green Infrastructure can be defined as an interconnected network of natural space that conserves natural ecosystem values and functions and provides associated benefits to human populations. Green Infrastructure describes the functionality of rivers, inland waterways, floodplains, wetlands, woodlands, farmland, coastal areas, parks and gardens and the services they provide.

Meath (including the adjacent areas to the Plan Area), has a number of areas designated for protection under the EU Habitats Directive⁷ which form part of a **European network** of important ecological sites known as the Natura 2000 network. These include Special Areas of Conservation (SAC), which are legally protected under the EU Habitats Directive for the conservation of habitats⁸ and species⁹, and Special Protection Areas (SPAs), which are protected under the EU Directive on the Conservation of Wild Birds¹⁰. The European sites in Meath are listed in Table 5.1 and in Figure 5.1.

Table 5.1: European Sites located in the Plan Area¹¹

European Sites in County Meath			
Site Code	Special Protection Area (SPA)	Site Code	Special Area of Conservation (SAC)
004232	River Boyne and River Blackwater SPA	002342	Mount Hevey Bog SAC
004065	Lough Sheelin SPA	000006	Killyconny Bog (Cloghbally) SAC
004080	Boyne Estuary SPA	001398	Rye Water Valley / Carton SAC
004158	River Nanny Estuary and Shore SPA	001810	White Lough, Ben Loughs and Lough Doo SAC
		001957	Boyne Coast and Estuary SAC
		002120	Lough Bane and Lough Glass SAC
		002299	River Boyne and River Blackwater SAC
		002340	Moneybeg & Clare island Bogs SAC
		002203	Girley (Drewstown) Bog SAC

⁷ EU Habitats Directive 92/43/EEC.

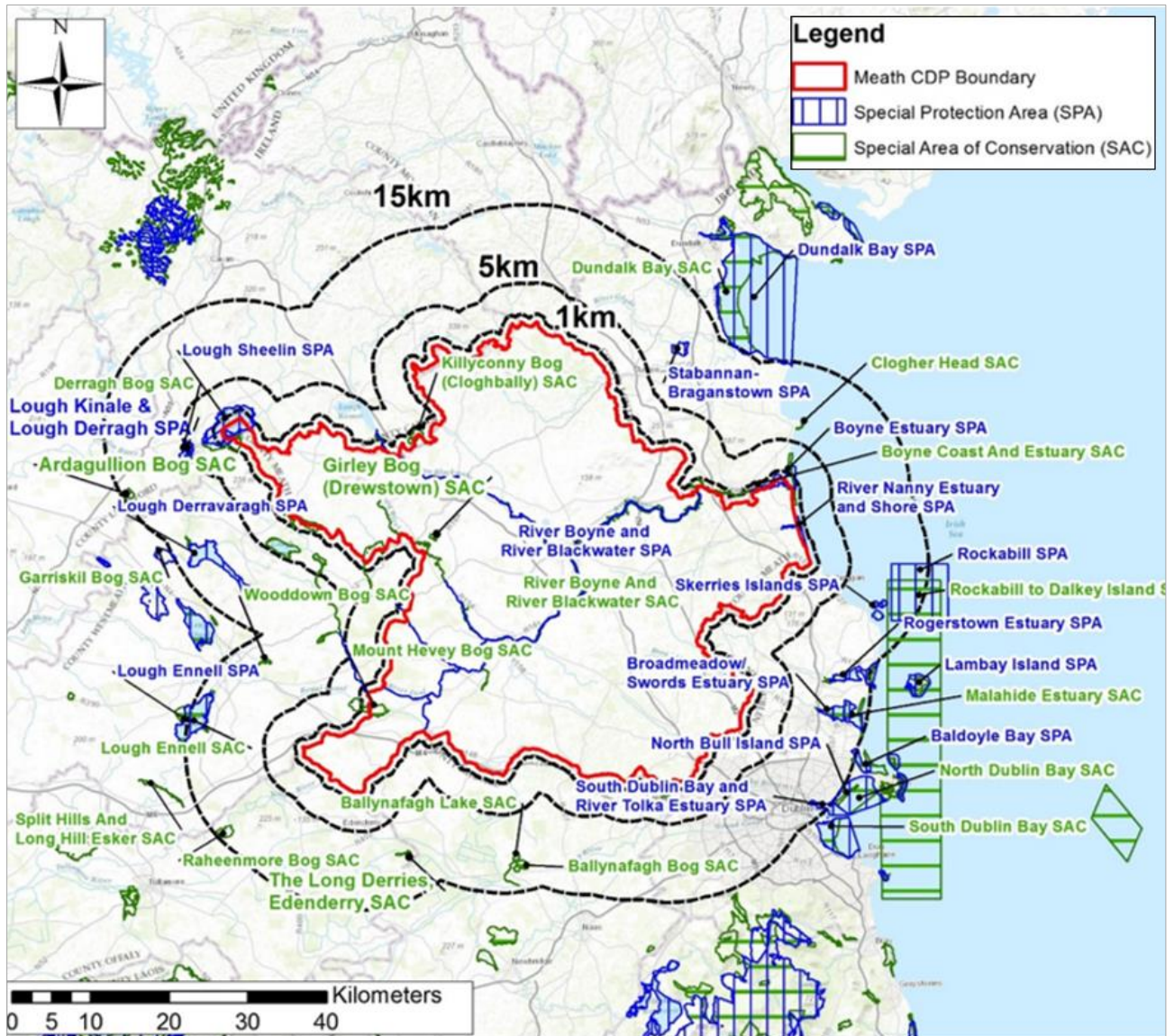
⁸ Annex I

⁹ Annex II

¹⁰ EU Directive on the Conservation of Wild Birds 2009/147/EC

¹¹ EPA AA Geotool Map (2021).

Figure 5.1: European Sites within and Adjacent to the Plan Area¹²



Nationally Designated Sites include Natural Heritage Areas (NHAs) which are legally protected areas that are considered important for their habitats or which holds species of plants and animals whose habitat needs protection. While not statutorily designated proposed Natural Heritage Areas (pNHAs) are also of significance for wildlife and habitats. There are four Natural Heritage Areas (NHAs) within Meath.

- Jamestown Bog NHA
- Girley Bog NHA
- Molerick Bog NHA

¹² Source: Natura Impact Report (NIR), Scott Cawley 2019

- Mount Hevey Bog

Existing biodiversity issues / and threats on Ireland's habitats and species, which are also relevant to Meath include¹³:

- **Development** - construction and use of residential, commercial, industrial and recreational infrastructure and areas (For example development on greenfield sites, the construction and development of the road network and changes in farming practices).
- **Transport systems** - development / operation of the transport systems (For example the construction and development of the road network and light and noise pollution).
- **Energy and infrastructure development** - for example construction of roads, power, water and wastewater, also windfarms, etc.
- **Green Infrastructure** - protecting the existing green infrastructure network from fragmentation and loss.
- **Ecosystem Services** - recognising and promoting the value of ecosystem services that the green infrastructure network provides to Meath.
- **Climate Change** - for example the loss of wetlands and dunes, due to climate change events i.e. storms and flood events, deposition.
- **Human-induced changes in water regimes** - for example wastewater treatment systems in the vicinity of waterbodies and contamination arising through poor working practices.
- **Mixed source pollution** - for example emissions from transport, heating homes, leachate from landfills and pollution from wastewater treatment systems.
- **Geological events, natural catastrophes** - for example flooding, storms / extreme weather events.
- **Agriculture** - for example intensive agricultural practices, the use of fertiliser and pesticides.
- **Awareness** - increasing awareness of biodiversity through enhanced interpretation on-site and through visitor facilities.
- **Land Management** - conversion of land / sites and sealing of soils can release CO₂ into the atmosphere and further reduce areas of 'carbon sinks'.
- **Alien and problematic species** - for example the loss of biodiversity, but also diseases.

¹³Department of Culture, Heritage and the Gaeltacht (DCHG) (2019). *The Status of EU Protected Habitats and Species in Ireland. Ireland's Article 17 report 2019.*

- **Invasive Species** - continued control and management of invasive species.

5.3 Population and Human Health

The administrative area of Meath is the second largest county in Leinster. It shares its boundary with counties, Dublin, Louth, Monaghan, Cavan, Westmeath, Offaly and Kildare.

The 2016 Census results showed that the population for County Meath was 195,044¹⁴ persons, an increase of 5.9% from the 2011 Census (184,135 persons)¹⁵. This accounts for 4.09% of the national population of 4,761,865 persons. The total population increase over the 10 year period 2006-2016 was 32,213 persons, which equates to a 19.8% increase. This was the third highest growth rate recorded in the Eastern and Midland Region (EMR) behind Laois (26.3%) and Fingal (23.3%).

In 2016 there were 2,328,517 people living in the Eastern and Midland Region. The population of Meath accounted for 8.4% of the regional population at this time. The Eastern Strategic Planning Area, which consists of the counties of Meath, Kildare, Louth, and Wicklow, had a population of 688,857 in 2016, 28.3% of whom resided in Meath.

Employment - there is a major imbalance in Meath between the location of jobs and where people live. In 2016 there was a resident workforce of 82,605 persons in the County while the total number of jobs recorded in the County was 50% of this figure at 41,757.

Housing - the distribution of future household (including population) growth in the Plan is based on the key principles of the *National Planning Framework* (NPF) and the *Regional Spatial and Economic Strategy* (RSES) of providing an adequate supply of quality housing to meet existing and future demand, including addressing the current housing crisis and homelessness.

The lack of any significant residential development over the past decade has resulted in residential construction lagging behind population growth. This has placed pressure on the existing housing stock, with increased rents, house prices, and homelessness evident within the County and across the region.

Tourism has been identified as one of the country's most important economic sectors and is credited with playing a significant role in the economic recovery in recent years. The quality and

¹⁴ 2016 Census. Available at:

http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=CTY31&Geog_Code=2AE19629149413A3E05500000000001

¹⁵ 2011 Census: <http://census.cso.ie/areaprofiles/PDF/CTY/meath.pdf>

diversity of Meath's tourism offer is particularly strong in relation to its rich heritage, quality rural landscape and many towns and villages, meaning the County has a lot to offer as a tourist destination.

The Boyne Valley is identified as the birth place of *Ireland's Ancient East* and Meath in particular is the gateway to this destination. Meath has a unique collection of pre-historic sites and monuments in particular the Brú na Bóinne, UNESCO World Heritage Site. Brú na Bóinne recorded 281,703 visitors in 2017. The Hill of Tara, Trim Castle, Newgrange, Knowth and Hill of Slane are all significant tourism attractions in the Meath with excellent visitor numbers.

Human health has the potential to be impacted upon by environmental factors such as air, water or soil through which contaminants could accumulate and have potential to cause harm through contact with human beings. The impact of development on human health is also influenced by the extent to which new development is accompanied by appropriate infrastructure and the maintenance of the quality of water, air and soil.

The greatest health risk from radiation in Ireland is caused by radon. **Radon** is a radioactive gas, which is naturally produced in the ground from the uranium present in small quantities in all rocks and soils.

The COVID-19 crisis that began in March 2020, has highlighted the importance of the natural environment in our local areas. The current limitations and social distancing requirements brought about as a result of COVID-19 have further highlighted the continuing need for the provision and access to these assets in our urban areas.

Existing population and human health issues / pressures on the population of Meath include:

- **Flooding** - Meath is vulnerable to fluvial and pluvial flooding events which occur as a result of storm events.
- **Radon** - the greatest health risk from radiation in Ireland is caused by radon
- **Health and Well-being** - continue the development of recreation and leisure facilities
- **Access** - The '*Access to and the use of Blue / Green Spaces in Ireland during a Pandemic*' study highlighted significant differences between socio-economic groups in relation to the amount of time spent outdoors in blue / green spaces during the pandemic with the lowest income group reporting the lowest average number of days.

- **Climate Change** - potential impacts of climate change on human health from changes to local weather, including prolonged periods of hot or cold weather - which can lead to heat and cold stresses and their associated effects.

5.4 Land, Soils and Geology

Meath is home to a diverse range of land uses including agriculture and equine industries, centres of local food production, recreational and tourist activities, established villages and rural housing. These combine to provide both residents and visitors with a quality environment to live, work and enjoy.

Meath's rich pasturelands support a wide variety of farming types. **Agriculture** has traditionally been the most important contributor to the rural economy of the County. While it may now provide less employment, it still remains important as a significant source of income and employment in rural areas. Furthermore, it is recognised that the agriculture sector plays an important role in environmental management and landscape protection and can play a central role in maintaining and enhancing the quality of the rural countryside.

Forests and **woodlands** play an important role in terms of supporting rural employment and rural diversity, climate change management and carbon sequestration, biodiversity and as a source of renewable / alternative energy sources. Forests and woodlands also have a significant recreational and amenity value.

Meath represents the eastern limit of **raised bogs** in Ireland and the Council recognises the potential for utilisation of protected areas for tourist, amenity, educational and research purposes.

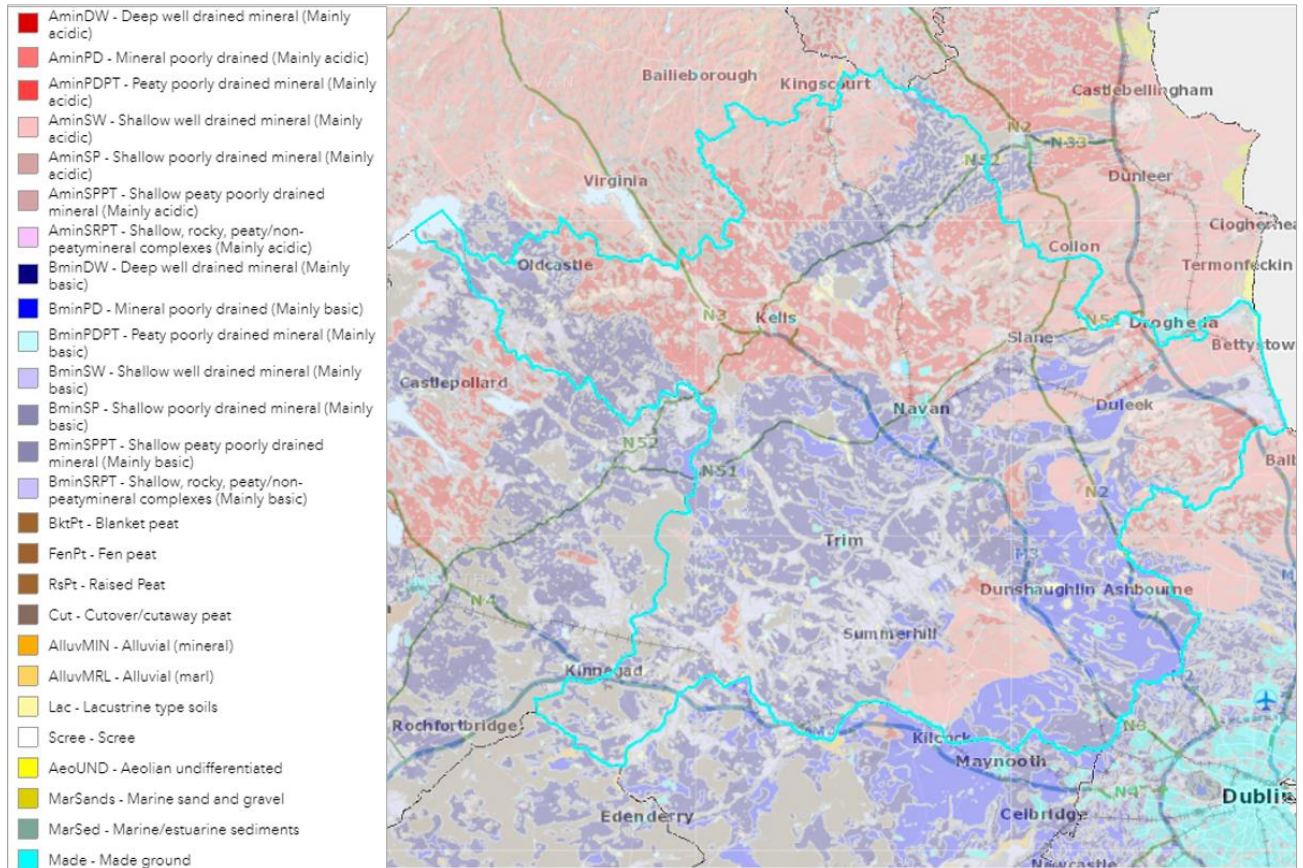
Meath contains a range of **soils** that support various habitats and land uses and provide valuable mineral resource potential. Fertile soils also provide the basis for a thriving agricultural and food sector, see Figure 5.2.

Quarries - Meath contains a variety of raw materials critical to the construction industry, in the form of sand, gravel, stone reserves including high purity limestones and shale used in cement and magnesia manufacture and base metal deposits.

However, extractive industries by their nature can give rise to harmful environmental and residential amenity effects including traffic generation, vibration, dust, noise, water pollution, visual intrusion and loss of groundwater supplies. There are 29 no. active quarries in County Meath, 19

no. of which were registered under Section 261A and 10 of which are operating with planning permission.

Figure 5.2: Soil Mapping for County Meath¹⁶



Geology - the predominant rock types in Meath are sedimentary rocks, limestone of Carboniferous age in particular. To the north by the Clontail Formation (Calcareous red-mica greywacke), the Fingal Group (Dark limestone, shale and micrite) and the Rathkenny Formation (Black mudstone, siltstone, greywacke) to the west and centre by the Lucan Formation (Dark limestone & shale), the south by Waulsortian Limestones Formation (massive unbedded lime-mudstone) and the east by the Loughshinny Formation (Dark micrite & calcarenite, shale)¹⁷.

The **Geological Heritage Audit** of Meath, identifies 28 no. geological sites of interest in the county.

Existing land, soil and geology issues / pressures with environmental considerations include:

¹⁶ GSI, Online Map Viewer (2019):

<https://dcnr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>

¹⁷ OSI, GSI (2019):

<https://dcnr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7ee1b6ab8d5&scale=0>

- **Soil** - the loss / damage of soil from the construction of greenfield sites for development.
- **Soil** - erosion of soils in the county from intensive agricultural / forestry practices, quarrying activities (including sand from sensitive areas in the east) and road and major infrastructural projects.
- **Soil** - the protection of soil and the need for a *Soil Protection Strategy*.
- **Soil** - local pollution of soil from the use of septic tanks systems to treat wastewater, from poorly maintained systems.
- **Soil** - disturbance of contaminated soils could result in potential for water pollution and potential further land contamination.
- **Soil sealing** - covering of the ground by an impermeable material. Soil sealing can potentially put biodiversity at risk, increase the risk of flooding and prevents natural drainage.
- **Pressure on soil** - from land-use change, intensification of agriculture, erosion, overgrazing, disposal of organic wastes to soils, afforestation, industry and urbanisation.
- **Land Management** - conversion of land / sites and sealing of soils can release CO₂ into the atmosphere and further reduce areas of 'carbon sinks'.
- **Contaminated soils** - can occur from unauthorised waste-related activities, leakages and accidental spillages of chemicals. Technical and financial constraints on development and the threat contaminated soils pose to the health of the population.
- **Geological Heritage** - the protection of sites of geological importance within the county.
- **Climate change** - carbon stored in soils plays an important role in maintaining soil functionality, in water and air quality and in climate change. Proper land use management is essential to prevent carbon stored in soil from being released into the atmosphere.
- **Groundwater** - rock types in the county that provides for a productive groundwater aquifer.

5.5 Water Quality

Water is fundamental to all life - humans, plants and animals. It is also critical in economic terms in generating and sustaining wealth in a number of key areas such as agriculture, fishing, power generation, industry, transport and tourism. Water resources are fragile and require continued protection.

Nearly half of the surface waters in Ireland are failing to meet the water quality objectives set by the Water Framework Directive because of pollution and other human disturbance¹⁸. Water quality in Ireland has seen an overall decline in surface water quality, especially in rivers, between 2004 and 2012¹⁹. Preserving a high standard of water is essential for human health and the natural environment.

Meath has a rich and extensive aquatic environment consisting of coastline, rivers, streams, lakes and estuarine waters (surface waters) and groundwaters (underground water). The Rivers Boyne and Blackwater are the prime watercourses within the County. The Royal and Boyne Navigation Canals, also form part of this aquatic environment. Collectively, they constitute an important economic, recreational, ecological and aesthetic resource for Meath.

The Water Framework Directive (WFD) defines '*overall surface water status*' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. In order to achieve a 'good status' both the ecological status and the chemical status of a surface water body need to be at least '*good*'.

The status of **rivers** in Meath range from '*poor*' to '*good*', however the majority of the major river waterbodies range from '*poor*' to '*moderate*'. The River Boyne and River Blackwater (ranging from '*poor*' to '*good*' status) are the main river waterbodies within the County. Section of these rivers (River Boyne and River Blackwater) are 'unassigned', as their waterbodies status is under review.

A total of 25 no. rivers are sampled by Meath County Council (MCC) for the purposes of physio-chemical monitoring under the Water Framework Directive. This operational and surveillance monitoring programme is key to directing the implementation of the River Basin Management Plans

¹⁸ EPA (2020). *Ireland's Environment - An Integrated Assessment 2020*.

¹⁹ Environmental Protection Agency (EPA) (2019). *Water Quality in Ireland 2013-2018*.

and also determines whether the targets and objectives of the Water Framework Directive are being achieved.

Environmental Protection Agency (EPA) data on the biological quality of watercourses, based on monitoring up to 2017, indicates that 19% of monitored river waterbodies in County Meath achieved a ‘good’ status or better. Therefore, 81% of monitored river waterbodies in County Meath are less than ‘good’, and so currently failing the Water Framework Directive objectives.

The Meath **coastline** extends for a distance of approximately 10km and stretches from the mouth of the River Boyne at Mornington, bordering County Louth to Gormanston at the mouth of the River Delvin, bordering County Dublin. The coastal zone of Meath contains important resources that provide economic, recreational, and conservation benefits. The coastline is home to a variety of natural habitats. The coastal waterbody of County Meath is the Northwestern Irish Sea waterbody and has a ‘high’²⁰ water quality status, while the Boyne Estuary Transitional Waterbody has a ‘moderate’²¹ status.

The **Groundwater** Water Framework Directive status in Meath between 2013 and 2018 was generally ‘good’²² and therefore must be protected from deterioration.

Bathing water is the term used for those locations where swimming or recreational use of beaches and lakes is practiced. In Ireland, bathing water information is compiled by the EPA from data submitted from local authorities. The most recent report on bathing water quality ‘Bathing Water Quality in Ireland - A Report for the Year 2020’²³ sets out the status of Irish Seawater and Freshwater Bathing areas. During the 2020 Annual Water Quality monitoring period, Laytown / Bettytown had an ‘excellent’ water quality status.

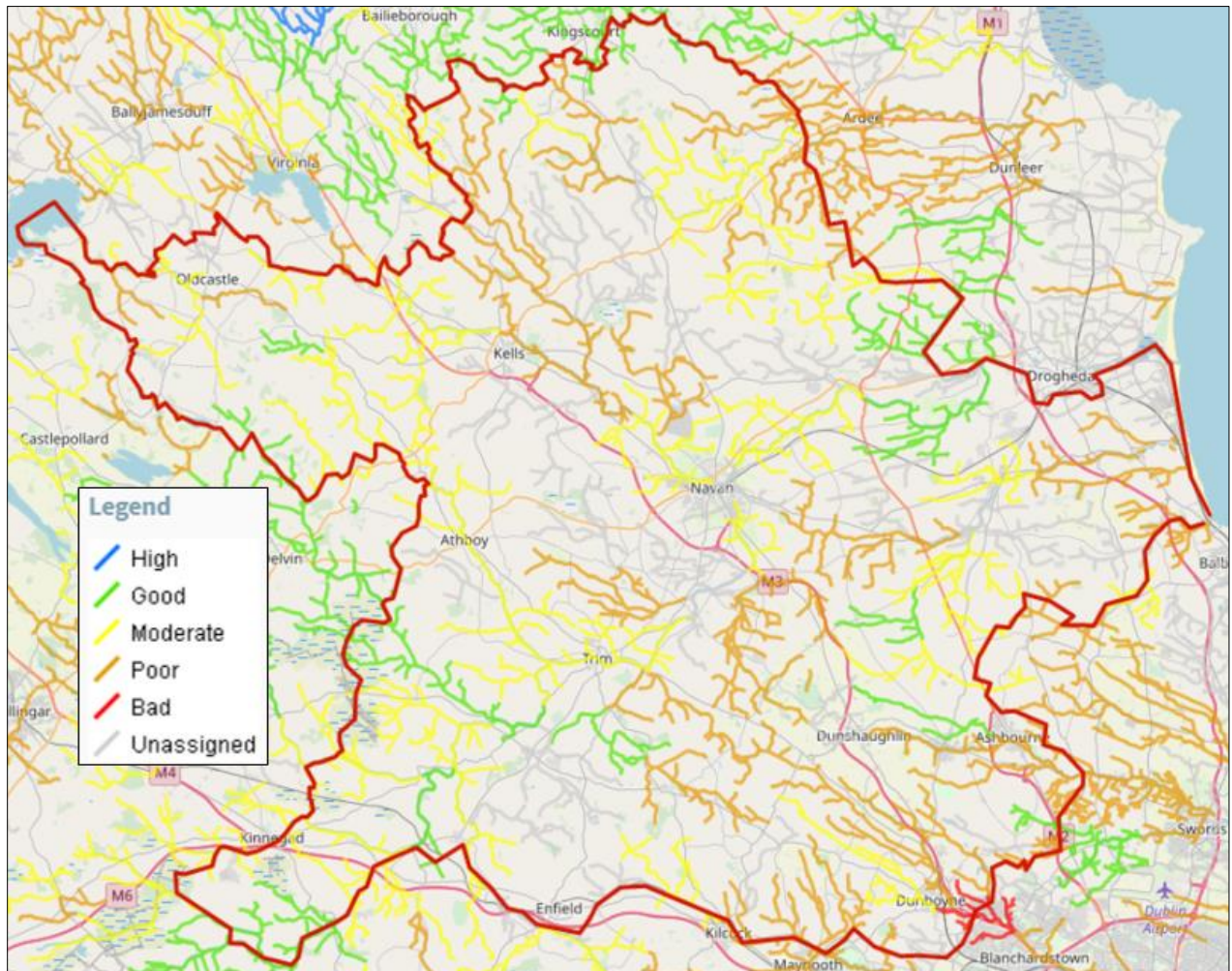
²⁰ Catchments.ie, EPA, 2019: <https://www.catchments.ie/maps/>

²¹ Catchments.ie, EPA, 2019: <https://www.catchments.ie/maps/>

²² Environmental Protection Agency (EPA) Maps (2021).

²³ EPA (2021). Available at: https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/Bathing_Water_Quality_in_Ireland_2020.pdf

Figure 5.3: Water Framework Directive River Waterbody Status for Meath 2013-2018²⁴



Floods are usually caused by a combination of events including overflowing river banks, heavy rains, coastal storms or blocked or overloaded drainage systems and an increase in development and impermeable surfacing. Numerous severe floods have occurred throughout the County in the last decade causing significant damage to property.

In line with *The Planning System and Flood Risk Management Guidelines for Planning Authorities*²⁵, a Strategic Flood Risk Assessment (SFRA) of Meath has been carried out to inform the preparation of the Plan. The SFRA was undertaken alongside the preparation of the Plan and SEA.

Existing water quality issues / pressures with environmental considerations include:

- **Water** - the rivers in Meath need to be improved to achieve ‘good’ ecological status in waterbodies by 2027.

²⁴ EPA (2019): <https://gis.epa.ie/EPAMaps/default> (OpenStreet Maps)

²⁵ Department of Environment, Heritage and Local Government (2009).

- **Water** - pressure on water sources include excessive nutrient enrichment.
- **Water** - pressure on water sources also comes from land use changes, intensification of agriculture, erosion, afforestation, industry and urbanisation.
- **Water** - water contamination arising through poor working practices, leakages or accidental spillage of materials if efficient pollution control measures are not fully implemented and maintained. Leachate from landfills, eutrophication and acidification from forestry.
- **Surface & Ground waters** - are at risk of pollution from septic tanks and wastewater treatment systems in the vicinity of waterbodies.
- **Groundwater** - the development of a wastewater leak detection programme and the implementation. Groundwater Water Framework Directive Quality Status in Meath (2013 to 2018) was generally 'good' and they need to be protected to prevent deterioration.
- **Flood Risk** - to be considered in Plan SEA documents as a key environmental criteria.
- **Flooding** - there is historic and predictive evidence of elevated levels of flood risk at various locations across the county.
- **Quarries** - pose a potential impact on the level of water tables and potential exposure of water table and contaminant to water tables.

5.6 Air Quality, Noise and Climate Change

Air quality legislation in Ireland highlights the need 'to avoid, prevent or reduce harmful effects on human health and the environment as a whole'.

The Environmental Protection Agency (EPA) manages the national ambient air quality monitoring network and measures the levels of a number of atmospheric pollutants. The EPA's latest publication *Ireland's Greenhouse Gas Emission Projections 2019-2040*²⁶ provides an assessment of Ireland's progress towards achieving its emission reduction targets set down under the EU Effort Sharing Decision²⁷, and a longer-term assessment based on current projections.

The current trends in air quality in Ireland are reported in the latest Environmental Protection Agency publication (2020) 'Air Quality in Ireland 2019'²⁸. The report indicates that air quality in Ireland is generally 'good' however there are localised issues in some of our cities, towns and

²⁶ EPA (2020). *Ireland's Greenhouse Gas Emissions Projections 2019-2040*.

²⁷ Decision No 406/2009/EC

²⁸ Environmental Protection Agency (EPA) (2020h). *Air Quality in Ireland 2019*.

villages. Ireland was above World Health Organization (WHO) air quality guidelines at 33 no. monitoring sites across Ireland - mostly due to the burning of solid fuel in our cities, towns and villages. The main sources of air pollution are domestic solid fuel burning, diesel fuelled vehicle emissions, agriculture and industry.

The objectives of EU and Irish **noise** legislation is *'to avoid, prevent or reduce harmful effects on human health and the environment as a whole'*.

The World Health Organisation (WHO) published the Environmental Noise Guidelines (in 2018) for the European Region. The WHO Guidelines have set out how noise pollution in towns and cities is increasing and how excessive noise (particularly from transport sources), has negative impacts on human health and wellbeing, adversely affecting sleep and cardiovascular and metabolic function.

The *Meath Noise Action Plan 2019*²⁹ is aimed at strategic long term management of environmental noise from transport systems i.e. traffic noise. The objective of the Noise Action Plan is to avoid, prevent and reduce where necessary, the long-term exposure to environmental noise. The Noise Action Plan aims to manage existing road noise and to prevent the future environmental noise environment.

Within the boundaries of County Meath there are approximately 174km of national roads and 71km of regional roads which qualify as major roads. There are four main population centres which fall within the areas covered by the strategic noise maps. These are Julianstown, Navan, Slane and Ratoath. There are also ribbon settlements along roads classified as major roads for strategic noise mapping. These are more common on regional roads. Larger developments such as motorways and national routes have fewer dwellings in the vicinity due to noise impact mitigation at the planning and route selection stages.

Climate change refers to a long-term, large scale change in global or regional climate patterns. In recent years, global temperatures have been rising. Urgent action is needed to address climate change and to move Ireland towards a low carbon, climate resilient economy and society.

In 2017, County Meath completed a Baseline Emissions Inventory, using 2012 as the baseline, to determine the major sources of emissions in the Meath. A top down approach was used to calculate the energy balance by apportioning the Sustainable Energy Authority of Ireland's (SEAI) national

²⁹ MCC (2019). Meath Noise Action Plan.

statistics to county level, using a number of comparable metrics from Central Statistics Office (CSO) Census data. This generated an indicative picture of Meath's current and projected energy footprint, which equated to a total of 1,453 CO₂ equivalent kilotons. The sector split of the total emissions is as follows:

- Transport - 28.8%
- Agriculture - 24.1%
- Residential - 23.9%
- Industry - 14.5%
- Services - 7.5%
- Meath County Council - 1.2%.

The *National Climate Action Plan 2019* is the Government's plan to tackle climate change. The Climate Action Plan sets out an ambitious course of action over the coming years to address the diverse and wide-ranging climatic impacts which Ireland is experiencing. The Climate Action Plan sets out clear 2030 targets for each sector with the ultimate objective of achieving a transition to a competitive, low-carbon and environmentally sustainable society and economy by 2050.

In 2019, Meath County Council (MCC) launched the *Climate Action Strategy 2019-2024* to respond to climate change challenges. A strong adaptation and mitigation strategy are relevant to Meath for three main reasons:

1. Thinking ahead and moving faster than others can deliver competitive advantage for Meath and its businesses.
2. Helping business, residents and our county get ready for the future. Many of the decisions made on new developments and infrastructure will be there for a long time. MCC want to make sure that the decisions made in Meath - by the Council, by officers and by business and residents anticipate this future. A strong adaptation strategy keep the county running in more extreme weather and avoids unforeseen shocks to our services, residents and business.
3. Playing our part. MCC want to play their part in the global challenge of reducing GHG and supporting national programmes to deliver the national commitments made by Ireland to reduce greenhouse gases to 20% below 2005 levels by 2020.

Existing **air quality, noise** and **climate change** issues / pressures with environmental considerations include:

- **Air emissions** - associated with the high use of the private car.
- **Air emissions** - associated with the burning of fossil fuels to buildings and emissions from industrial activity.
- **Air emissions** - associated with agriculture.
- **Noise levels** - noise associated with increased traffic on major roads.
- **Noise levels** - increasing traffic volumes affect the acoustic environment.
- **Climate change** - the need to incorporated and implement strategic goals from higher level plans and programmes.
- **Climate change** - direct and indirect impacts to biodiversity from flooding, temperature changes, sea level rise, etc.
- **Climate change** - direct and indirect impacts to people from flooding, health effects etc.
- **Climate change** - increased incidence of flooding with impacts for populations, development, etc.
- **Climate change** - changes to agricultural practices, greater water requirement, etc.

5.7 Material Assets

Material assets are resources that are valued and essential to a development and the surrounding area. Material assets may be of either natural or human origin and the value may arise for economic or cultural reasons. Material assets include water supply, wastewater treatment infrastructure, waste disposal including recycling, transport infrastructure (road, rail, airports and ports), energy and supply networks and telecom services. Material assets also includes economic assets such as coastal and water resources which support fisheries and aquaculture.

As of January 2014, Irish Water replaced local authorities as a single provider of water supply and wastewater services. Irish Water is responsible for providing and developing public water services; and ensuring drinking water quality meets the standards in the *Drinking Water Regulations*.

In 2018, c. 45 million litres (ML) of **drinkable water** was treated and supplied through 64 no. separate public water supply schemes and a watermain distribution network of over 1,800km in County Meath. The 2016 Census indicates that almost 50,000 private households (out of a total of 64,234 private households) in Meath and 6,000 businesses throughout Meath are served by public

watermains. The remaining households and business premises are served by either Group Water Schemes or private wells, which do not fall within the remit of Irish Water.

As part of the *Water Supply Project, Eastern and Midlands Region (WSP)*, Irish Water, has plans – currently as a preferred option³⁰ – to abstract water from the Parteen Basin on the Lower River Shannon and to pipe the water to a new reservoir at Peamount in South Dublin County, from where it would connect to the Greater Dublin network and provide treated water supplies to communities in North Tipperary, Offaly, Laois, Westmeath, Kildare, Meath and Wicklow.

Irish Water is responsible for providing and developing public water services; and ensuring **drinking water quality**. The latest *Drinking Water Quality in Public Supplies 2019*³¹ was published by the Environmental Protection Agency (EPA) in 2020, and outlines important issues which should be addressed to protect and improve public drinking water supplies. This report also notes that the quality of drinking water in public supplies remains high.

The EPA's *Water Quality in Ireland 2013-2018*³² highlights that one of the key causes of water pollution is from point sources including discharges from **wastewater** treatment plants.

There have been significant changes in responsibilities for water supply and wastewater treatment services. As of January 2014 Irish Water replaced local authorities as a single provider of water supply and wastewater services.

There are c. 40 no. Wastewater Treatment Plants (WWTPs) and more than 1,000km's of sewer network in County Meath.

One of the key drivers for a sustainable economy is the concept of a 'circular' economy. A circular economy aims to reduce **waste** and ensure that materials are used as efficiently as possible. The *Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021* provides a framework for the prevention and management of waste in a sustainable manner in 12 local authority areas. The Eastern-Midlands Region comprises Dublin City Council, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow County Councils.

³⁰ Irish Water (2020). *Water Supply Project*. At: <http://www.watersupplyproject.ie/>

³¹ Environmental Protection Agency (EPA) (2020i). *Drinking Water Quality in Public Supplies 2019*.

³² EPA (2019). *Water Quality in Ireland 2013-2018*.

Waste management in Ireland is regulated by the Waste Management Acts, which require Local Authorities to prepare detailed plans for the management of waste. Meath is well served with a wide range of waste facilities from:

- waste transfer stations;
- Waste to Energy facility, landfill;
- a Construction and Demolition (C&D) waste facility; and
- a network of recycling facilities supported by the MCC.

Navan, Trim, Kells and Dunboyne are served by **recycling** centres. The remainder of the county is served by a network of bring banks which accept a broad diversity of materials. The Indaver Waste to Energy (WtE) facility in Duleek is a privately owned **recovery facility**. The Knockharley **regional landfill**, near Kentstown, is a privately operated landfill facility.

Transport is fundamental to how we live and work. A well performing transport system is essential to the functioning of society and the economy as a whole.

County Meath is strategically placed within the Greater Dublin Area (GDA) between the cities of Dublin and Belfast. As a result the County is well served by a high quality motorway, National, Regional and local road network. The residents of County Meath rely heavily on the use of private cars for transport and towns nearest Dublin have the highest number of commuters.

At present, rail services are available at stations located in Dunboyne, Pace (M3 Parkway), Enfield, and a limited service provided from Gormanston Village. There are rail stations located immediately adjoining the County which are also used by Meath residents, these are Maynooth, Kilcock, Clonsilla, Drogheda and Balbriggan.

Cycling and **walking** is environmentally friendly, fuel-efficient and a healthy mode of transport. Meath County Council will continue to improve walking facilities in the County in conjunction with the NTA. Meath has had a successful roll out of the Greenway programme in the County with the success of the Boyne Greenway and the Royal Canal Greenway.

Ireland is committed to a range of **renewable energy** and efficiency targets. In 2014 the European Council adopted a new framework, the *2030 Climate and Energy Framework*³³. This framework

³³ which includes EU-wide targets and policy objectives for the period from 2021 to 2030.

recommends new targets and measures to make the economy and energy system more secure and sustainable³⁴.

Gas and electricity are the **energy utilities** which have traditionally supported homes and businesses across Meath. ESB Networks and EirGrid are the providers for the **electricity** distribution in the county. **Gas** Networks Ireland (GNI) are the utility provider for the supply, transmission and distribution of natural gas.

Green and blue infrastructure plays an essential role in creating a more healthy and liveable county. **Green infrastructure** including parks and open space, promote health and well-being, provide recreational facilities. **Blue infrastructure** refers to waterways and waterbodies such as rivers, canals and the sea. The limitations and social distancing requirements brought about as a result of COVID-19 have further highlighted the continuing need for the provision and access to these assets in our urban areas.

Existing material assets issues / pressures with environmental considerations include:

- **Water Supply** - ongoing issues with security of water supply in the Dublin and Mid-East Regions for existing users.
- **Water Supply** - on-going investment in water conservation / leak detection and fixing.
- **Water Supply and Wastewater Services** - rural housing developments resents challenges in terms of adequate servicing with potable water and wastewater infrastructures.
- **Wastewater Services** - new developments, should only be permitted where there is adequate capacity in the wastewater infrastructure in accordance with urban wastewater treatment disposal requirements and standards.
- **Energy** - reduction of reliance on fossil fuels, increased use of renewable energy resources.
- **Transport** - the movement of people is key to the success of new development and areas, where adequate transport infrastructure to development is fundamental.
- **Waste** - population growth and development, and challenges in providing sustainable recycling infrastructure continues to put pressures on the local authorities to provide better waste management and access to waste services.

³⁴ European Council (2017).

- **Utilities** - provision, protect and maintenance of adequate utilities to support existing and envisaged development.

5.8 Cultural Heritage

County Meath is intrinsically linked to its cultural heritage, and is central to how individuals, communities and the County see themselves. Meath County Council (MCC) recognises the importance of identifying, valuing and safeguarding the archaeological and architectural heritage of Meath for future generations which can be achieved through the proper management, sensitive enhancement and / or appropriate development of this resource.

Archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, put on a statutory basis by amendment to the National Monuments Act 1994, of sites and areas of archaeological significance, numbered and mapped. A recorded monument is a monument included in the list and marked on the map, which comprises the Record of Monuments and Places set out county by county. The Sites and Monuments Record (SMR) is a manual containing a numbered list of all certain and possible monuments accompanied.

Meath's wealth of archaeological and built heritage makes it exceptional in Ireland. It includes the UNESCO World Heritage Site of Brú na Bóinne, the seat of the High Kings of Ireland at Tara, the passage tombs of Loughcrew, the largest Anglo-Norman castle in Europe at Trim, the historic towns and villages (Navan, Trim, Kells and Slane), great country houses, demesne landscapes, and a significant industrial heritage of canals and mills. Meath's natural heritage includes scenic river valleys, rolling farmland, a network of mature hedgerows and diverse coastal habitats.

Meath County Council has prepared a *Heritage Plan 2015-2020* which aims to identify priorities for action, establish a framework for the management of heritage at local level and increase awareness, appreciation and enjoyment of their heritage for all.

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

Architectural Conservation Areas (ACAs) are of great importance for the protection and enjoyment of our heritage. An ACA is a place, area or group of structures or townscape that is of special

architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures. There are 23 no. areas designated as ACAs in Meath which are listed in Table 5.2 below.

Table 5.2: Architectural Conservation Areas in County Meath

Architectural Conservation Area	Architectural Conservation Area
Ardbraccan Demesne	Navan Historic Core
Athboy	Oldbridge Demesne
Dunboyne	Oldcastle
Dunsany Castle Demesne	Slane
Headfort Demesne	Slane Castle Demesne
Julianstown	Slane Mill Complex
Kells Historic Core	Somerville Demesne
Kells – Headfort Place	Stackallen Demesne
Kilmessan	Summerhill
Laytown – Netterville and Victoria Terrace	Trim Historic Core
Longwood	Trim Porch Fields
Moynalty	

In addition to these areas, numerous additional structures worthy of preservation are located throughout the county, many relating directly to the pastoral rural condition of the county up until recent times. These include:

Industrial Heritage refers to everything from the extraction of raw materials, manufacturing and processing into usable forms or finished products, public utilities, transport, communications and energy production. Over the past number of years there has been a growing public awareness of Ireland’s industrial heritage, and a number of sites have been restored and are now open to the public as tourist and educational attractions. A desktop survey of the industrial heritage of the County was carried out in 2008.

Walled Towns: Navan, Trim, Kells and Athboy are medieval walled towns. Of these, only Trim has substantial lengths of town wall remaining upstanding.

The protection of the world's cultural and natural heritage is of importance for present and future generations. A Tentative List is an inventory of those properties which a country intends to consider for nomination to the World Heritage List.

Two sites in the County have been included on the Tentative List as part of larger assemblies of sites:

- The Tara Complex as part of The Royal Sites of Ireland (Cashel, Dún Ailinne, Hill of Uisneach, Rathcroghan Complex and Tara Complex).
- Kells, as part of the Early Medieval Monastic Sites (Clonmacnoise, Durrow, Glendalough, Inis Cealtra, Kells and Monasterboice).

Existing cultural heritage issues / pressures with environmental considerations include:

- **Development** - development of infrastructure can potentially impact on the integrity of sites or features and their views to / from architectural, archaeological or cultural heritage interest.
- **Development** - in close proximity to sites and areas of cultural heritage may adversely impact upon the cultural landscape setting.
- **Development** - can adversely impact on community's sense of place.
- **Archaeology** - impact on archaeological monuments and their settings including undiscovered sites / features.
- **Landscapes** - there is a need to identify and protect culturally important landscapes.
- **Tourism** - demand for development in areas of tourism can potentially impact cultural heritage sites and features.
- **Climate change** - the direct effects of climate change on heritage e.g. flooding.
- **Awareness** - increasing public awareness of the cultural value and social and economic significance of the County's built heritage.

5.9 Landscape and Visual

The landscape of the county is varied and is one of the county's greatest resources. The landscape of the County has many vantage points which offer attractive views from hilltops and upland areas, along river valleys and the coast. These scenic views are of an amenity and tourism value and contribute to our quality of life.

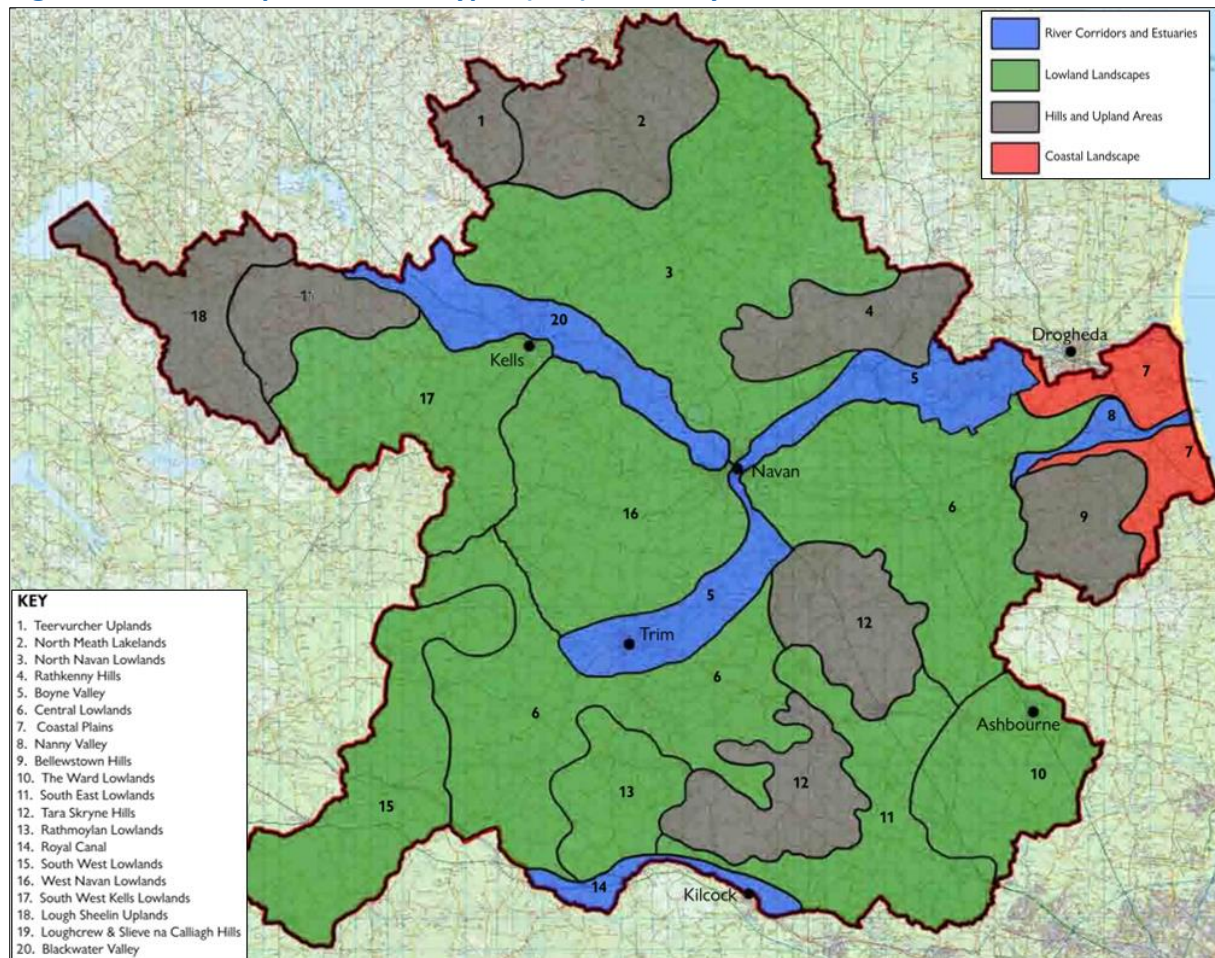
A **Landscape Character Assessment** (LCA) is a process that describes maps and classifies landscapes. Landscape character is defined as '*a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse*'.

Landscape Character Types (LCT) are distinct types of landscape that are relatively similar in character and are generic in nature in that they may occur in different localities throughout the country. The LCA contained in the Plan divides the county into four main LCTs.

- Hills and Upland Areas
- Lowland Areas
- River Corridors and Estuaries
- Coastal Areas

The location of these areas are shown in Figure 5.4 below.

Figure 5.4: Landscape Character Types (LCT) in County Meath³⁵



The importance of **landscape and visual amenity** and the role of planning in its protection are recognised in the Planning and Development Act 2000 (as amended), which requires that Development Plans include objectives for the preservation of the character of the landscape, including the preservation of views and prospects and the amenities of places and features of natural beauty or interest. Landscape objectives of the current Development Plan aims to preserve the views and prospects and to protect views from development which would interfere unduly with the visual amenity and character of the landscape, so far as practically possible.

The landscape of the County has many vantage points which offer attractive views from hilltops and upland areas, along river valleys and the coast. Many of these views are associated with heritage and tourism sites and provide vantage points over high quality landscapes. These scenic views are of an amenity and tourism value and contribute to our quality of life.

³⁵ Source: Meath Plan 2021-2027 Appendix 7

Within the Meath Plan, over 90 no. views and prospects are protected as shown in Appendix A12 (Protected Views and Prospects) of the Plan and Map 9.5.1 (Volume 3 of the Plan).

Many important and significant biodiversity areas occur outside sites that are subject to legal protection under EU and National legislations. There are many habitats and important features that are of particular importance for biodiversity throughout Ireland, including County Meath. Such areas include, hedgerows, woodlands and other field boundary types such as stone walls and ditches, rivers, streams, canals, wetlands, salt marshes and sand dunes.

Existing landscape and visual issues / pressures with environmental considerations include:

- **Development** - developments (including housing) are having adverse and visual impacts on the landscape.
- **Housing** - visual impact with greatest pressure for expansion of settlements.
- **Green Infrastructure** - protecting the existing green infrastructure network from fragmentation and loss due to pressures of urban development within and adjoining the network.
- **Ecosystem Services** - recognising and promoting the value of ecosystem services that the green infrastructure network provides to the county.
- **Agriculture / forestry** - agricultural practices and expansion in lowlands and large scale forestry development in uplands.
- **Quarrying** - impact of operations on the landscape.

6 Strategic Environmental Objectives (SEO)

Strategic Environmental Objectives (SEOs) assist in the prediction, description and monitoring of impacts on the environment as a result of the Plan. If complied with in full, SEOs would result in an environmentally *neutral* impact from the implementation of the Plan.

The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan can be evaluated in order to help identify areas in which *significant negative* impacts are likely to occur, if unmitigated.

The SEOs are distinct from the objectives of the Plan, although they will often overlap, and are developed from international, EU or national legislation which generally govern environmental protection objectives. Such policies include those of various European Directives which have been transposed into Irish law, all of which are intended to be implemented at county level and integrated into any Plan for the county.

The aim of the SEA is to facilitate environmental protection and to allow the integration of environmental considerations into the development of the Plan. This SEA process assesses the Plan as it evolves in terms of its environmental impacts, *positive, negative, neutral* and cumulative. The SEA process highlights how improvements can be integrated into the Plan to increase its environmental performance and maintain environmental resources. The SEOs are therefore used to assess all the policies, objectives and land-use zonings within the Plan and were also used as the basis for the monitoring programme, refer to Section 10 of the NTS.

The Strategic Environmental Objectives are set out in Table 6.1.

Table 6.1: Strategic Environmental Objectives (SEO) for the Plan

Theme	Strategic Environmental Objectives
Biodiversity (Flora & Fauna) (B)	(B_1) Preserve, protect, maintain and where appropriate restore the terrestrial, aquatic and soil biodiversity, including internationally, EU and nationally designated sites and protected species.
Population & Human Health (PHH)	(PHH_1) Provide high quality residential, community, working and recreational environments with access to sustainable transport options.
	(PHH_2) Protect human health and well-being.
Soils & Geology (SG)	(SG_1) Safeguard sensitive soil resources.
Water Quality (W)	(W_1) Protect and where necessary improve and maintain water quality and the management of watercourses, groundwater and the marine environment, in compliance with the requirements of the WFD objectives and measures.
Air Quality & Noise (AN)	(AN_1) Minimise emissions of pollutants to air associated with transport.
	(AN_2) Minimise noise emissions associated with traffic and transport.
Climate Change (CC)	(CC_1) Minimise contribution to Climate Change by adopting adaptation and mitigation measures.
Material Assets (MA)	(MA_1) Make best use of existing infrastructure and promote the sustainable development of new infrastructure to meet the needs of the county's and Meath's population.
Cultural Heritage (CH)	(CH_1) Protect places, features, buildings and landscapes of cultural, archaeological and / or architectural heritage from impact as a result of development.
Landscape & Visual (LV)	(LV_1) Protect and maintain the special qualities of the landscape character including coastal character within Meath.

7 Consideration of Alternatives

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

Article 5(1) of the SEA Directive and 13E(1) of the Planning Development (Strategic Environmental Assessment) Regulations 2004 (as amended 2011) requires that the Planning Authority considers within the Environmental Report:

- reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme;
- the alternatives are identified, described and evaluated;
- an outline of the reasons for selecting the alternatives dealt with; and
- a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how encountered in compiling the required information.

7.1 Limitations in Available Alternatives

The Plan is required to be prepared by the Planning and Development Act 2000 (as amended), which specifies various types of objectives that must be provided for by the Plan. The alternatives available for the Plan are significantly limited by the provisions of higher-level planning objectives, including those of the National Planning Framework (NPF) and the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midlands Region, refer to Section 4 of the NTS. These documents set out various requirements for the content of the Plan including on topics such as land-use zoning, residential unit requirements and the sustainable development of rural areas.

7.2 Alternative Scenarios

As noted above, the selection of alternatives to the approach for the new Plan is restricted by the requirement to comply with the policies and objectives of the National Planning Framework, the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midlands Region and other national guidelines, all of which have been subject to SEA. Likewise consideration of a ‘do-nothing’ alternative is not considered as this is not reasonable for a County Development Plan. The RSES includes population projections for each Strategic Planning and Local Authority area in the region for 2026 and 2031, refer to Table 7.1 below.

Table 7.1: Population and Projected Population for County Meath 2011 to 2031

County Meath	2011	2016	2026	2031
Population	184,135	195,044	-	-
Projected Population (RSES)	-	-	216,000- 221,000	225,500- 231,500
Projected Population (Plan)	-	-	221,250- 227,500	225,500- 231,500

Meath County Council has a duty to plan for this increase in population and to set out how it can be suitably accommodated within the Plan area

7.2.1 Alternative 1: Demand-led Growth (County-wide - Urban and Rural)

This scenario is one which places limited restrictions on development throughout County. The development of critical mass in certain locations is not taken into consideration and no specific targets or limitations on growth are set in the settlement or core strategies of the Plan. This strategy would still require careful consideration of the environmental impacts of development, either individually or cumulatively.

In order to develop under this scenario, the Planning Authority would allow for development to proceed in a demand-led manner at any given urban or rural location within its functional area. This scenario would likely result in increased development pressure both on the fringes of the towns and settlements as well as in the open countryside. Consequently development pressure could take place in poorly or insufficiently serviced areas, particularly in the areas close to the county border with Dublin.

The environmental consequences of this alternative are potentially severe. Aspects of the environment such as surface water and groundwater quality, ecology, cultural heritage and landscape could be negatively affected.

7.2.2 Alternative 2: Centred Development Strategy (Settlements)

The second alternative '*Centred Development Strategy*' comprises a strong yet flexible approach to development, with development focused equally on all settlements supported by strongly protected rural areas.

This alternative would be based around the planned growth and a sustainable settlement structure based on the Core Strategy which creates equal development opportunity across all settlements in

the county. In this scenario the council would facilitate development equally in all settlements in the county irrespective of their hierarchy or their current absorption capacity. Strong protection would be afforded to the rural environment preventing further rural housing.

This development scenario would have negative impacts on the viability of smaller settlements and rural areas within Meath. Such areas would experience a decline in population and as a consequence rural based enterprise would be affected.

7.2.3 Alternative 3: Structured Development Strategy (Strong Urban Centres with Rural Protection)

The third alternative Structured Development Strategy focuses on a balanced approach to building strong urban centres and generating critical mass in the key settlements. These larger towns would act as focal points for their rural catchments. Development outside of these key centres would be subjected to a balanced growth and a robust rural protection policy. Under this scenario the following results are envisaged:

- Lead to a balanced approach to future development.
- Consistent with NPF and RSES.
- Key areas for growth are identified and promoted.
- Supports sustainable delivery of services and transport options.
- Provides for a high level of environmental protection across all areas.
- Rural populations would be supported.

7.3 Assessment of Alternatives

This section provides an evaluation and assessment of the likely significant environmental effects of implementing available alternatives in Table 7.2. The process sought to understand whether each alternative was likely to improve (positive impact), conflict (negative impact) with, or have a neutral interaction (neutral impact) with the receiving environment.

Alternative 1 Demand-led Growth which involves minimal intervention would likely result in negative impacts across all environmental receptors throughout the county. This option would not allow for orderly and sustainable development and is therefore not considered as a desirable option for the Plan.

Alternative 2 Centred Development Strategy positively promotes development in settlements. However, while this approach would be appropriate in larger settlements, it would present challenges for smaller settlements in meeting the demand for provision of required social and

services infrastructure and sustainable transport. Bias against all rural development would also have a negative effect for those who require a rural location (e.g. agriculture) and would have a negative impact on social and economic development generally.

Alternative 3 Structured Development Strategy represents a balanced recognition of established patterns of development in the county but with regard to the requirements of the NPF and RSES. The approach provides the need for rural protection while allowing an appropriate level of growth within settlements. This approach works with existing and planned delivery of services infrastructure and presents the best option towards sustainable transport.

7.3.1 Preferred Option

Following the above evaluation and assessment, the preferred strategic alternative for the approach to the Plan is **Alternative 3: Structured Development Strategy**. This is based on the following:

- consistency with the requirements of the NPF and RSES;
- maintains and enhances all existing settlements, within a connected neighbourhood context;
- promotes rural protection while allowing an appropriate level of growth within settlements; and
- promotes sustainable delivery of services and transport options.

Table 7.2: Assessment Matrix of Alternative Scenarios against Environmental Receptors

Alternative	Biodiversity (Flora & Fauna)	Population & Human Health	Soils & Geology	Water Quality			Air Quality	Climate Change	Noise	Material Assets				Cultural Heritage	Landscape & Visual
				Surface Water	Groundwater	Flooding				Water Supply	Wastewater Treatment	Waste Management	Transport		
Alternative 1: Demand-led Growth															
Alternative 2: Centred Development Strategy															
Alternative 3: Structured Development Strategy															

Key

Positive	
Negative	

8 Strategic Environmental Assessment of the Plan

8.1 Introduction

The purpose of this section of the SEA Environmental Report (Volume 2) is to predict and evaluate as far as possible the environmental effects of the Plan.

This Non-Technical Summary (NTS) is a summary of the detailed assessment of the policies and objectives and land-use zonings contained within the Plan (2021-2027), which will identify where, if any, effects on the environment may occur. The policies and objectives are assessed against the SEOs for *likely significant environmental effect*. These may be either potentially *positive*, *uncertain* or potentially *negative*, direct or indirect, cumulative and / or in-combination effects. While the majority will have *positive* effects, some principles, policies and objectives of the Plan have been identified as having potential for *uncertain* or *negative* environmental effects. These are highlighted as requiring further consideration and for development of appropriate mitigation measures.

In accordance with SEA Guidelines the assessment identifies ‘*impact*’ under four headings. Firstly the quality of impact is addressed using the following terms:

Potential Positive Impact - a change which improves the quality of the environment.

Potential Negative Impact - a change which reduces or lessens the quality of the environment.

Uncertain Impact - the nature of any impact cannot be ascertained at this stage.

Neutral or No Relationship - a change which does not affect the quality of the environment.

8.2 Environmental Assessment of Plan

By assessing the policies and objectives in the Written Statement of the Meath County Development Plan 2021-2027 against the environmental objectives it identified where there were any incompatibilities and / or conflicts between them and where environmental considerations needed to be strengthened. Where considered necessary the assessment resulted in recommended mitigation for some objectives. The assessment matrix is included in the SEA Environmental Report (Volume 2) and mitigation is addressed in Section 9 of this NTS.

Each chapter of the Plan list the policies and objectives relating to the particular topic of that chapter as outlined below:

- Chapter 1: Introduction
- Chapter 2: Core Strategy
- Chapter 3: Settlement and Housing Strategy
- Chapter 4: Economy and Employment Strategy
- Chapter 5: Movement Strategy
- Chapter 6: Infrastructure Strategy
- Chapter 7: Community Building Strategy
- Chapter 8: Cultural and Natural Heritage Strategy
- Chapter 9: Rural Development Strategy
- Chapter 10: Climate Change Strategy
- Chapter 11: Development Management Standards and Land Use Zoning Objectives

The Plan includes a wide range of policies and objectives for sustainable development and environmental protection of the county. As set out in Tables 8.2 and 8.3 of the SEA Environmental Report (Volume 2) and Table 8.1 below, the majority of these policies and objectives will have *Positive or a Neutral* impact on the environment, or otherwise have No Direct Relationship.

In addition the Plan contains a significant number of policies and objectives which by their drafting and substance are protective of environmental factors or the environment as a whole. The protective policies and objectives also assist in the mitigation of *potential negative* effects of other policies and objectives (as set out in Tables 8.2 and 8.3 of the SEA Environmental Report (Volume 2) and Chapter 9: Mitigation).

Table 8.1: SEA Summary Assessment

		Environmental Receptors								
		Biodiversity (Flora & Fauna)	Population & Human Health	Soils & Geology	Water Quality	Air Quality & Noise	Climate Change	Material Assets	Cultural Heritage	Landscape & Visual
1	Introduction									
2	Core Strategy									
3	Settlement & Housing									
4	Economy & Employment									
5	Movement									
6	Infrastructure									
7	Community Building									
8	Cultural and Natural Heritage									
9	Rural Development									
10	Climate Change									
11	Development Management									
-	Settlements (Volume 3)									

Key

Positive		Uncertain	
Neutral		Negative	



8.3 Draft Plan

The Draft Plan was accompanied by the SEA Environmental Report, which assessed reasonable alternatives for the Plan; assessed the environmental impact of the Plan; and provided mitigation and a structure for proposed monitoring of the Plan. A copy of the SEA of the policies and objectives of the Draft Plan is included in Appendix A8.1 of this Environmental Report. Some 2542 submissions were received during the Draft Plan consultation period, with three submissions subsequently withdrawn. This stage was subject to 299 Notices of Motion. The extent and detail of the submissions and observations received highlighted the significant level of public interest in the plan-making and assessment process.

8.4 Proposed Material (and Non-Material) Amendments Assessment

Screening of the Proposed Amendments (material and non-material) was carried out in May 2021. Screening of the Proposed Amendments (material and non-material) to the Meath County Development 2021-2027 was for the requirement of Strategic Environmental Assessment.

The assessment was prepared in accordance with Directive 2001/42/EC of the European Parliament and of the Council of Ministers, on the Assessment of the Effects of Certain Plans and Programmes on the Environment.

Screening was part of the ongoing SEA process that was undertaken alongside the preparation of the Meath County Development Plan 2021-2027.

Following consideration of submissions received during the public consultation process and during consultation with the Elected Members of the council, 276 no. Proposed Amendments (material and non-material) were proposed to the Plan. The majority of amendments were texted-based changes relating to the clarification of text.

All Proposed Amendments were assessed for *likely environmental impact* and the findings are recorded in the Proposed Material Amendments document prepared by Meath County Council.

Screening for SEA identified that the existing protective policies and objectives in the Plan will ensure protection of the environment aspects / mitigation of potential environment effects.

The Strategic Environmental Assessment of the Proposed Material Amendments is out in the SEA Environmental Report (Section 8.3 of Volume 2), while the full screening of all amendments

(material and non-material) is provided in Table 1 in Appendix A8.2 (SEA Environmental Report (Volume 2)).

8.5 Proposed Modifications to Material Amendments

Submissions made during the public consultation phase for the proposed material amendments were considered by the Chief Executive (CE) and any modifications to the material amendments were screened for SEA.

The Chief Executives Report took into consideration the submissions on the material amendments. The assessment of modifications to material amendments is provided in Table 2 in Appendix A8.2 (SEA Environmental Report (Volume 2)).

8.6 Adoption of the Meath County Development Plan 2021-2027

The material amendments and the recommended modifications to the material amendments were considered by the Elected Members of Meath County Council in September 2021. Elected members voted to adopt the Plan with most of the proposed amendments on 22 September 2021, rejecting some of the CE recommendations.

The Meath County Development Plan 2021-2027 was adopted on the 22 September and is effective from the 3 November 2021.

8.7 Interrelationship between Environmental Factors

The SEA Environmental Report includes information on the likely significant effects on the environment, including on issues such as biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

8.8 Cumulative Impacts

This section provides an outline of the potential cumulative effects on the environment as a result of implementation of the Plan.

Cumulative effects are referred to SEA Guidance documents and are defined in the *EPA Sea Process Checklist* (2008) as:

“effects on the environment that result from incremental changes caused by the strategic action together with other past, present and reasonably foreseeable future actions. These

*effects can result from individually minor but collectively significant actions taking place over time or space*³⁶.

These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources.

The EPA publication, *'Good Practice Guidance on Cumulative Effects Assessment in Strategic Environmental Assessment'* (2020), notes that in Ireland, key cumulative effects – “where environmental receptors are at, or near, their thresholds or their capacity to assimilate more change – include climate change; water management, including flood risk management; air quality; and biodiversity, including peatlands and wetlands. Land-use change over time is irrevocably changing Ireland’s landscape. There may also be more locally significant cumulative effects; for example, loss of tranquillity and amenity affecting people’s health and wellbeing. The cumulative effects assessment in SEA should focus on the key cumulative issues of climate change, water quality, flood risk, air quality, biodiversity and landscape, plus any other locally significant cumulative effects.”

There are two types of potential cumulative effects that have been considered:

- **Potential intra-Plan cumulative effects** - these arise from the interactions between different types of potential environmental effects resulting from a plan, programme, etc. The interrelationships between environmental components that help determine potential effects, e.g. interrelationships between: human health and water quality. Refer to Section 8.4.
- **Potential inter-Plan cumulative effects** - these arise when the effects of the implementation of one plan occur in combination with those of other plans, programmes, developments, etc.

Section 8.5 of the SEA Environmental Report (Volume 2) outlines the environmental topics that interact with each other (e.g. human beings and water and soils) as well as the international, national, regional and local plans, policies and programmes that have the potential for cumulative or in-combination effects with the Meath County Development Plan.

8.9 Appropriate Assessment

A Stage 2 Appropriate Assessment (AA) has been undertaken alongside the preparation of the Plan and the SEA.

³⁶ Environmental Protection Agency (EPA) (2008). *SEA Process Checklist*.

Under the EU Habitats Directive, the requirement for AA is provided. A Natura Impact Report (NIR) has been prepared in accordance with the Planning and Development Act, 2000 (as amended) and in accordance with the requirements of Council Directive 1992/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. The conclusion of the NIR is:

“The assessment identified that the majority of the CDP (e.g. policies and land use zonings) did not give rise to likely significant effects on European sites, and that where likely significant effects were identified these could be mitigated. All actions arising from the CDP shall be required to conform to the mitigation measures contained within this NIR. In addition, all lower level plans and projects arising from the implementation of the CDP will themselves be subject to the requirements of the Habitats Directive, as transposed into Irish law, when details become known.

This Natura Impact Report recorded the decisions that were taken during the preparation of the CDP. It determined that, assuming the successful implementation of the policies/objectives in the Written Statement, compliance with the Settlement Written Statement and Maps and application of the mitigation measures provided in Appendix C to E (from draft CDP through to minor alterations to material amendments stages), there would be no adverse effects on integrity of European Sites in isolation or in combination with other Plans and Projects acting in the same area.”

8.10 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan and the SEA and the NIR. The recommendations from the SFRA have been integrated into Plan.

Policies and objectives have been integrated into the Plan through the SEA, SFRA and AA processes. The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA.

8.11 Climate Change and Adaptation

Climate change is one of the cross-cutting themes of the Plan. Chapter 10 of the Plan outlines the approach to climate change adaptation and greenhouse gas mitigation, and examines how mitigation and adaptation strategies have been integrated into the main body of the Plan. This is to ensure that the climate change strategy has been developed collaboratively and is fully integrated and consistent with the Policies and Objectives of the Plan.

The Chapter outlines how aspects of Climate Change Mitigation has been addressed under all areas of the Plan, including Transport; Agriculture and Land Use; Residential; Industry and Services; and Energy. The Chapter goes on to address how Climate Change Adaptation has also been integrated under Transport; Energy and Waste Infrastructure; Water Resource Management; Built Environment: Residential, Business and Industry and Services; Agriculture; Ecosystems and Biodiversity; and Heritage and Tourism.

8.12 Overall Evaluation

Meath County Council has prepared the Meath County Development Plan 2021-2027 and has integrated recommendations arising from the SEA, AA and SFRA processes into the Plan. Section 8.2 and (refer to Section 8.2 of the SEA ER (Volume 2)) provides a detailed overall evaluation of the environmental effects arising from the Plan. The effects take account of potential in-combination / cumulative effects arising from implementation of the Plan. Potentially significant adverse environmental effects (if unmitigated) arising from implementation of the Plan are detailed, as are appropriate and detailed mitigation measures (refer Chapter 9). Taking into account, inter alia, the detailed mitigation which has been integrated into the Plan (including that which is identified at Chapter 9), it has been determined that significant residual adverse environmental effects will not occur. Requirements for monitoring of potential environmental impacts during the implementation of the Plan are set out in Chapter 10 (Monitoring) of this report.

9 Mitigation Measures

Mitigation measures are the measures used to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

While every effort will be taken to ensure that the impact of the Plan on the environment is *neutral to positive*, certain *unavoidable negative* impacts may occur as a result of its adoption. Where *uncertain* or *potential negative* impacts have been identified, appropriate protective objectives are included in Plan to ensure adequate protection of the environment. These include protective policies for all aspects of the environment including, population and human health, biodiversity (flora and fauna), land, soil, water, air and climate, material assets, cultural heritage and the landscape. Mitigation was achieved through the:

- Strategic work undertaken by MCC to ensure contribution towards environmental protection and sustainable development;
- Considering alternatives for the Plan;
- Integration of environmental considerations into zoning provisions of the Plan; and
- Integration of individual SEA, AA and SFRA provisions into the text of the Plan.

The mitigation process which is set out in Table 9.1 will ensure that implementation of the Plan will have a *neutral to positive impact* on the environment as a whole.

Table 9.1: Mitigation Measures - List of Protective Policies and Objectives in the Plan

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
Biodiversity (Flora and Fauna) (B)	
SOC POL 39	To protect the integrity of Natura 2000 sites during the identification of suitable sites for recreation, in particular in terms of their design and use.
HER POL 27	To protect, conserve and enhance the County's biodiversity where appropriate.
HER POL 29	To raise public awareness and understanding of the County's natural heritage and biodiversity .
HER OBJ 32	To actively support the implementation of the All Ireland Pollinator Plan 2021-2025 and any revisions thereof.
HER OBJ 33	To ensure an Appropriate Assessment in accordance with Article 6(3) and Article 6(4) of the Habitats Directives (92/43/EEC) and in accordance with the Department of Environment, Heritage and Local Government Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009 and relevant EPA and European Commission guidance documents, is carried out in respect of any plan or project not directly connected with or necessary for the management of the site but likely to have a significant effect on a Natura 2000 site(s), either individually or in combination with other plans or projects, in view of the site's conservation objectives.
HER OBJ 34	To protect and conserve the conservation value of candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed Natural Heritage Areas as identified by the Minister for the Department of Culture, Heritage and the Gaeltacht and any other sites that may be proposed for designation during the lifetime of this Plan in accordance with the provisions of the Habitats and Birds Directives and to permit development in or affecting same only in accordance with the provisions of those Directives as transposed into Irish Law.
HER POL 35	To ensure, where appropriate, the protection and conservation of areas , sites, species and ecological/networks of biodiversity value outside designated sites and to require an appropriate level of ecological assessment by suitably qualified professional(s) to accompany development proposals likely to impact on such areas or species.
HER POL 43	To promote best practice in the control of invasive species in the carrying out its functions in association with relevant authorities including TII and the Department of Transport, Tourism and Sport.
Population and Human Health (PHH)	
CS OBJ 2	To ensure that sufficient zoned lands are available to satisfy the housing requirements of the County in designated settlements over the lifetime of the Plan.
CS OBJ 14	To support the economic growth of Meath as set out in the Regional Spatial and Economic Strategy and the Economic Development Strategy for County Meath 2014-2022.
SH POL 1	To ensure that all settlements , in as far as practicable, develop in a self-sufficient manner with population growth occurring in tandem with the provision of physical and social infrastructure.

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
SOC POL 31	To support the implementation of the Healthy Meath Strategy 2019-2021 in consultation with the relevant agencies and authorities.
SOC POL 2	To support the provision and distribution of a range of community infrastructure facilities in accordance with the Settlement and Core Strategies to meet the needs of the County’s population in conjunction with other statutory, voluntary, private sector and community groups.
MOV POL 1	To support and facilitate the integration of land use with transportation infrastructure , through the development of sustainable compact settlements which are well served by public transport, in line with the guiding principles outlined in RPO 8.1 of the EMRA RSES 2019-2031.
INF POL 8	To continue to work with Irish Water to ensure the protection of public health through the ongoing provision of high-quality drinking water in compliance with drinking water standards.
INF OBJ 59	To seek to ensure, in cooperation with relevant authorities, that waste management facilities are appropriately managed and monitored according to best practice to maximise efficiencies to protect human health and the natural environment.
Soil and Geology (SG)	
ED POL 19	To support and facilitate sustainable agriculture, agri-food, horticulture, forestry, renewable energy and other rural enterprises at suitable locations in the County.
RD POL 15	To encourage sustainable forestry development , which is planted, managed and harvested in accordance with the Forest Service Guidelines for Landscape, Forest Harvesting and Environmental, Archaeology, Biodiversity and Water Quality.
RD POL 12	To facilitate the development of agriculture while ensuring that natural waters, wildlife habitats and conservation areas are protected from pollution.
RD POL 27	To ensure that development for aggregates / mineral extraction , processing and associated processes does not significantly impact in the following areas: <ul style="list-style-type: none"> i. Existing & Proposed Special Areas of Conservation (SACs); ii. Special Protection Areas (SPAs); iii. Natural Heritage Areas and Proposed Natural Heritage Areas; iv. Other areas of importance for the conservation of flora and fauna; v. Areas of significant archaeological potential; vi. In the vicinity of a recorded monument, and; Sensitive landscapes. vii. World Heritage Sites.
HER POL 46	To maintain the geological and geomorphological heritage values of County Geological Sites listed in Table 8.7 and, through consultation with the Geological Survey of Ireland, protect them from inappropriate development.

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
CS OBJ 4	To achieve more compact growth by promoting the development of infill and brownfield/regeneration sites and the redevelopment of underutilised land within and close to the existing built-up footprint of existing settlements in preference to edge of centre locations.
Water (W)	
INF OBJ 29	To strive to achieve ‘good status’ in all water bodies in compliance with the Water Framework Directive and to cooperate with the implementation of the National River Basin Management Plan 2018-2021.
INF POL 7	To continue to support Irish Water’s Water Conservation Programme .
INF POL 30	To implement the policies and objectives as set out within the National Marine Planning Framework to realise the full benefits of our ocean wealth in a managed and sustainable way ensuring climate change is taken into account.
INF OBJ 7	To promote the sustainable use of water and water conservation in existing and new development within the County and encourage demand management measures among all water users.
INF OBJ 19	To ensure that developments permitted by the Council which involve discharge of wastewater to surface waters or groundwaters comply with the requirements of the EU Environmental Objectives (Surface Waters) Regulations and EU Environmental Objectives (Groundwater) Regulations.
INF OBJ 8	To protect both ground and surface water resources and work with Irish Water to develop and implement Water Safety Plans to protect sources of public water supply and their contributing catchment.
INF OBJ 22	To ensure flood relief measures are suitably designed to protect the conservation objectives of Natura 2000 sites, and to avoid direct or indirect impacts upon qualifying interests or Natura 2000 sites.
INF OBJ 23	To protect and enhance the County’s floodplains, wetlands and coastal areas subject to flooding as “green infrastructure” which provide space for storage and conveyance of floodwater, and ensure that development does not impact on important wetland sites within river/stream catchments.
Air Quality and Noise (AN)	
INF OBJ 71	To continue to monitor air and noise quality results submitted from selected locations throughout the County in co-operation with the Health Service Executive and the Environmental Protection Agency.
INF OBJ 72	To support the collation of air quality and greenhouse gas monitoring data in support of a regional air quality and greenhouse gas emission inventory.
INF OBJ 73	To support and facilitate the preparation of strategic noise maps and action plans, in conjunction with EMRA, that support proactive measures to avoid, mitigate and minimise noise, in all instances where it is likely to have adverse impacts.
MOV OBJ 56	To avoid locating residential development and other noise sensitive land uses in areas likely to be affected by inappropriate levels of noise.

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
Climate Change (CC)	
CS OBJ 13	Support the implementation of the National Climate Change Strategy and the National Climate Change Adaption Framework Building Resilience to Climate Change 2012 through the County Development Plan and through the preparation of a Climate Change Adaptation Plan in conjunction with all relevant stakeholders.
INF POL 36	To support the implementation of the National Climate Change Strategy and to facilitate measures which seek to reduce emissions of greenhouse gases.
INF OBJ 40	To seek to reduce reliance on fossil fuels in the County by reducing the energy demand of existing buildings, in particular residential dwellings.
INF OBJ 46	To support the implementation of the actions of the Meath Climate Action Strategy 2019-2024 and review and update the Energy Management Action Plan 2011-2012, “Think Globally Act Locally”.
HER OBJ 44	To maintain and enhance our natural coastal defences to increase resilience to climate change.
INF POL 35	To seek a reduction in greenhouse gases through energy efficiency and the development of renewable energy sources utilising the natural resources of the County in an environmentally acceptable manner consistent with best practice and planning principles.
INF OBJ 41	To promote the generation and supply of low carbon and renewable energy alternatives, having regard to the opportunities offered by the settlement hierarchy of the County and the built environment.
INF POL 20	To require that a Flood Risk Assessment is carried out for any development proposal, where flood risk may be an issue in accordance with the “Planning System and Flood Risk Management - Guidelines for Planning Authorities” (DoECLG/OPW, 2009). This assessment shall be appropriate to the scale and nature of risk to and from the potential development and shall consider the impact of climate change.
INF POL 25	To have regard to the recommendations of the Fingal East Meath Flood Risk Assessment and Management Study (FEMFRAMS) and the Eastern Catchment Flood Risk Assessment and Management Study (CFRAMS).
Material Assets (MA)	
INF POL 1	To liaise and work in conjunction with Irish Water in the development and upgrade of water supply systems to ensure that the County has an adequate, sustainable and economic supply of suitable quality piped water for all users.
INF POL 5	To require that in the case of all developments where public watermains are available or likely to be available and have sufficient capacity, that such development shall connect to them.
INF POL 8	To continue to work with Irish Water to ensure the protection of public health through the ongoing provision of high-quality drinking water in compliance with drinking water standards.

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
INF OBJ 11	To ensure that all development shall connect to the public foul sewer network where available within the County.
INF POL 61	To facilitate the implementation of National Waste Legislation, National and Regional Waste Management Policy and the circular economy.
INF OBJ 39	To support Ireland’s renewable energy commitments outlined in national policy by facilitating the development and exploitation of renewable energy sources such as solar, wind, geothermal, hydro and bio-energy at suitable locations within the County where such development does not have a negative impact on the surrounding environment (including water quality), landscape, biodiversity or local amenities so as to provide for further residential and enterprise development within the county.
MOV OBJ 39	To facilitate the delivery of all of the roads projects outlined in the National Development Plan 2018-2027 and National Transport Authority’s Transport Strategy for the GDA 2016-2035, in conjunction with the NTA, TII, Department of Transport and other stakeholders. Development of these road projects will be subject to the outcome of the Appropriate Assessment process.
MOV POL 32	To ensure the protection of the existing roads infrastructure while improving the capacity and safety of the road network to meet future demands.
DM OBJ 83	To encourage the location of telecommunications structures at appropriate location within the County, subject to environmental considerations.
Cultural Heritage (CH)	
HER POL 1	<p>To protect sites, monuments, places, areas or objects of the following categories:</p> <ul style="list-style-type: none"> • Sites and monuments included in the Sites and Monuments Record as maintained by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht; • Monuments and places included in the Record of Monuments and Places as established under the National Monuments Acts; • Historic monuments and archaeological areas included in the Register of Historic Monuments as established under the National Monuments Acts; • National monuments subject to Preservation Orders under the National Monuments Acts and national monuments which are in the ownership or guardianship of the Minister for Culture, Heritage and the Gaeltacht or a local authority; • Archaeological objects within the meaning of the National Monuments Acts; and Wrecks protected under the National Monuments Acts or otherwise included in the Shipwreck Inventory maintained by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.
HER POL 2	To protect all sites and features of archaeological interest discovered subsequent to the publication of the Record of Monument and Places, in situ (or at a minimum preservation by record) having regard to the advice and recommendations of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and The Framework and Principles for the Protection of the Archaeological Heritage (1999).
HER POL 6	To protect the Outstanding Universal Value of the UNESCO World Heritage Site of Brú na Bóinne in accordance with the relevant guidelines and national legislation, so that its integrity, authenticity and significance are not adversely affected by inappropriate development or change.

Protective Policies / Objectives from the Meath County Development Plan 2021-2027	
HER OBJ 2	To ensure that development in the vicinity of a Recorded Monument or Zone of Archaeological Potential is sited and designed in a sensitive manner with a view to minimal detracting from the monument or its setting.
HER POL 14	To protect and conserve the architectural heritage of the County and seek to prevent the demolition or inappropriate alteration of Protected Structures.
HER POL 16	To protect the setting of Protected Structures and to refuse permission for development within the curtilage or adjacent to a protected structure which would adversely impact on the character and special interest of the structure, where appropriate.
HER POL 19	To protect the character of Architectural Conservation Areas in Meath.
HER POL 26	To encourage the protection and enhancement of heritage gardens and demesne landscapes, and to support, in consultation with the owners, the provision of public access to these sites as appropriate.
Landscape and Visual (LV)	
HER OBJ 48	To support the aims and objectives of the European Landscape Convention by implementing the relevant objectives and actions of the National Landscape Strategy 2015-2025 and any revisions thereof.
HER POL 52	To protect and enhance the quality, character, and distinctiveness of the landscapes of the County in accordance with national policy and guidelines and the recommendations of the Meath Landscape Character Assessment (2007) in Appendix 5, to ensure that new development meets high standards of siting and design.
HER OBJ 56	To preserve the views and prospects listed in Appendix 10, in Volume 2 and on Map 8.6 and to protect these views from inappropriate development which would interfere unduly with the character and visual amenity of the landscape.
HER POL 37	To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required.
INF OBJ 33	To protect the special character of the coast by preventing inappropriate development, particularly on the seaward side of coastal roads. New development, wherever possible, shall be accommodated within existing developed areas.
RD POL 24	To seek to ensure that the extraction of minerals and aggregates minimise the detracting from the visual quality of the landscape and do not adversely affect the environment or adjoining existing land uses.

10 Monitoring Programme

Article 10 of the Strategic Environmental Assessment Directive (2001/42/EEC) requires that the significant environmental effects of the implementation of the Plan are monitored in order to identify, at an early stage, unforeseen adverse effects and in order to undertake appropriate remedial action. This is to provide for any unforeseen *adverse* effects to be identified at an early stage in its implementation, allowing for appropriate remedial action to be undertaken.

The primary purpose of monitoring is to allow the actual impacts of the Meath County Development Plan 2021-2027 on adoption to be assessed against the Strategic Environmental Objectives and their associated targets (overall aim) and indicators (measurement of monitoring change). The indicators and targets used will show changes that would be attributable to the implementation of the Plan.

Monitoring can use existing sources of information and does not necessarily require new research to be undertaken. However, monitoring can be effective in identifying where additional research should be targeted to supplement where information is deficient.

The environmental monitoring programme is outlined in Table 10.1 and has been developed based on the SEA Objectives. The SEA Objectives formed the basis of the assessment of the Plan and it includes targets (overall aim), indicators (measurement of monitoring change) and data sources.

Meath County Council will work with other agencies, including EPA, the NPWS, IFI, and those with environmental mandates to gather data for the purposes of monitoring the Plan. It is proposed that the SEA monitoring reporting should go parallel with the reviewing of the Plan.

Table 10.1: Environmental Monitoring Programme

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency		
Biodiversity (Flora & Fauna) (B)					
<p>Preserve, protect, maintain and where appropriate, restore the terrestrial, aquatic and soil biodiversity, of international, EU and nationally designated sites, protected species and habitats.</p>	<ul style="list-style-type: none"> ▪ Condition of European Sites ▪ Changes in number and extent of Protected Sites. ▪ Number of sites containing rare or threatened species. ▪ Number of rare or threatened species. ▪ Incidences of major fish kills. ▪ Achievement of the Objectives of Biodiversity Plans. ▪ Net area of new green infrastructure established. ▪ Invasive species control. 	<ul style="list-style-type: none"> ▪ That biodiversity is integrated into all decision-making across the Plan. ▪ Submission of Screening Report or Natura Impact Statement for proposed developments with planning applications in / and / or near European Sites. ▪ No loss of protected habitats and species during the lifetime of the Plan. ▪ Prevent the introduction or spread of invasive or alien species. 	<ul style="list-style-type: none"> ▪ Department of Culture, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (2 years). ▪ Department of Culture, Heritage and the Gaeltacht National Monitoring Report for the Birds Directive under Article 12 (2 years). ▪ MCC monitoring of preparation of local land use plans (2 years). ▪ MCC monitoring of likely significant environmental effects of grants of permission (2 years). ▪ Consultations with the NPWS (2 years). ▪ Consultation with Inland Fisheries (every 2 years) 		
<p>Maintain and where appropriate, enhance the biodiversity value of local designated and non-designated ecological and heritage areas, which function as stepping stones for migration, dispersal and genetic exchange of wild species.</p>					
<p>Enhance biodiversity in line with the National Biodiversity Strategy and its targets.</p>					
Population and Human Health (PHH)					

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency
<p>Provide high quality residential, community, working and recreational environments with access to sustainable transport options.</p> <p>Protect human health and well-being from environment-related pressures.</p>	<ul style="list-style-type: none"> ▪ Increase in new public open space / sport facilities ▪ Number of mobility statements submitted with applications. ▪ Changes in modal shift to public transport. ▪ Changes in air quality monitoring. ▪ Changes in water quality. 	<ul style="list-style-type: none"> ▪ Increase in the number of green spaces and amenities available to the public. ▪ Improved trends in quality of life related to these matters. ▪ No significant deterioration in human health as a result of environmental factors. ▪ Increase the number of active travel routes available to the population. 	<ul style="list-style-type: none"> ▪ MCC review of progress on implementing Plan objectives (every 2 years). ▪ Consultations with the Health Service Executive (every 2 years). ▪ Consultations with the EPA (every 2 years). ▪ Consultations with Department of Transport & Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (every 2 years). ▪ CSO data (as updated). ▪ MCC monitoring of preparation of local land use plans (8 years).
Soils and Geology (SG)			
<p>Safeguard sensitive soil, resources and geological heritage sites.</p> <p>Promote the sustainable use of infill and brownfield sites over the use of greenfield within the County.</p>	<ul style="list-style-type: none"> ▪ Rates of re-use / recycling of construction waste. ▪ Number / severity of recorded soil-based pollution incidences. ▪ Area of land lost through greenfield development. 	<ul style="list-style-type: none"> ▪ Reduce the use of greenfield land by encouraging the reuse of brownfield sites. ▪ Achieve target for growth on infill as per NPF. ▪ Ensure sustainable extraction of non-renewable sand, gravel and rock deposits and the reuse and recycling of construction and demolition waste. 	<ul style="list-style-type: none"> ▪ Consultations with the Environmental Protection Agency (EPA). ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years). ▪ Consultations with Department of Environment, Climate and Communications (every 2 years).
Water Quality (W)			
<p>Protect and where necessary improve and maintain water quality and the management of watercourses and</p>	<ul style="list-style-type: none"> ▪ Achievement of the objectives of the River Basin Management Plans. 	<ul style="list-style-type: none"> ▪ Not to permit development where it would result in a WWTP exceeding the terms of its discharge license. 	<ul style="list-style-type: none"> ▪ EPA Monitoring Programme for WFD compliance (as updated). ▪ EPA Remedial action list (as updated).

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency
<p>groundwater in compliance with the requirements of the WFD objectives and measures.</p> <p>Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion.</p>	<ul style="list-style-type: none"> ▪ Percentage increase in the overall quality of surface waters. ▪ Amount of new developments within flood plains. ▪ Annual costs of damage related to flood events. ▪ Compliance with discharge parameters. 	<ul style="list-style-type: none"> ▪ Encourage future population growth in areas served by Urban WWTP and public water supplies. ▪ All waters within the plan area to achieve the requirements of the WFD and the relevant River Basin Management Plan by 2027. 	<ul style="list-style-type: none"> ▪ Consultations with Department of Environment, Climate and Communications (every 2 years). ▪ MCC monitoring of likely significant environmental effects of grants of permission (every two years).
Air Quality and Noise (AN)			
<p>To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture.</p> <p>Minimise travel related emissions and encourage a modal change from car to more sustainable forms of transport.</p> <p>Minimise noise emissions associated with traffic and transport and other noise</p>	<ul style="list-style-type: none"> ▪ Traffic, Transport and Vehicular survey data. ▪ Measurable reductions in concentrations of air pollutants. ▪ Compliance with national air quality standards. ▪ Measures take to improve air quality / noise reduction. 	<ul style="list-style-type: none"> ▪ Provide for increased use of public transport. ▪ Increase number of cycle lanes and pedestrian routes in the plan area. ▪ Improve ambient air quality trends, particularly in relation to transport-related emissions of NOx and particulate matter through reduction of private vehicle usage. ▪ An increase in the percentage of the population travelling to work or school by public transport or non- mechanical means. 	<ul style="list-style-type: none"> ▪ CSO data (as updated). ▪ Data from the National Travel Survey (as updated). ▪ EPA Air Quality Monitoring (as updated). ▪ Consultations with Department of Transport & Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (every 2 years). ▪ Consultations with Department of Environment, Climate and Communications (every 2 years). ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years).

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency
and wind related industry etc.			
Climate Change (CC)			
Minimise contribution to Climate Change by adopting mitigation and adaptation measures.	<ul style="list-style-type: none"> ▪ Rates of energy / renewable energy consumption. ▪ Reduction in GHG emissions. 	<ul style="list-style-type: none"> ▪ Achieve transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. ▪ Increase in the proportion of people resident in the County reporting regular cycling / walking to school and work above 2016 CSO figures. 	<ul style="list-style-type: none"> ▪ EPA Annual National Greenhouse Gas Emissions Inventory reporting (every 2 years). ▪ Consultations with Climate Action Regional Office (every 2 years).
Integrate sustainable design solutions into the County’s infrastructure (e.g. energy efficient buildings; green infrastructure).	<ul style="list-style-type: none"> ▪ Percentage of new housing developments within specified distance to transport hubs. ▪ Increase in renewable energy developments – both strategic and micro-production. 	<ul style="list-style-type: none"> ▪ Increase in modal shift from private fossil fuel-based car to public transport compared to 2016 levels. ▪ Contribute towards the target of aggregate reduction in carbon dioxide (CO2) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors. ▪ To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating. 	<ul style="list-style-type: none"> ▪ Consultations with Department of Environment, Climate and Communications (every 2 years). ▪ CSO data Consultations (as available). ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years).
Cultural Heritage (CH)			
Protect places, features, buildings and landscapes of cultural, archaeological	<ul style="list-style-type: none"> ▪ Number of recorded features lost. 	<ul style="list-style-type: none"> ▪ No permitted development which involves loss of cultural heritage, including protected structures, archaeological sites, 	<ul style="list-style-type: none"> ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years).

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency
and/or architectural heritage from impact as a result of development.	<ul style="list-style-type: none"> ▪ Condition of ACAs. ▪ Number of protected structures impacted by new development. ▪ Number of additions and deletions to the RPS. 	<p>Architectural Conservations Areas and landscape features.</p> <ul style="list-style-type: none"> ▪ To increase the number of uninhabited and derelict structures that are restored. 	<ul style="list-style-type: none"> ▪ Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (every 2 years).
Landscape & Visual (LV)			
Protect and maintain the special qualities of the landscape character, especially with regard to areas of high landscape sensitivity and value.	<ul style="list-style-type: none"> ▪ Number of developments permitted within landscapes of exceptional value and high sensitivity as per the LCA. ▪ Number of views or prospects impacted by new development. ▪ Number of recommendations of LCA for County Meath implemented. 	<ul style="list-style-type: none"> ▪ Ensure no significant disruption of significant natural or historic / cultural landscapes and features through objectives of the Plan. ▪ Ensure that proposed development does not detract from the visual amenity of protected views. ▪ Implement in full the recommendations of the Landscape Character Assessment for Meath. 	<ul style="list-style-type: none"> ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years).
Material Assets (MA)			
Make best use of existing infrastructure, promote the sustainable development of new infrastructure and protect existing assets, to meet the needs of the county and South Dublin’s population.	<ul style="list-style-type: none"> ▪ Tonnage of waste produced and recycled. ▪ Range and extent of recycling facilities and services. ▪ Total area of prime agricultural land 	<ul style="list-style-type: none"> ▪ Reduction in the quantities of waste sent to landfill. Increase in the quantities of waste sent for recycling. ▪ Compliance with Regional Waste Management Plan. ▪ Improvements to existing water and wastewater infrastructure. 	<ul style="list-style-type: none"> ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years). ▪ CSO data (as updated). ▪ Consultations with Irish Water. ▪ Department of Housing, Planning and Local Government in conjunction with regional local authorities (every 2 years).

Objective	Indicators	Targets	Data Sources, Responsibility and Frequency
	<p>developed as per the Development Plan process.</p> <ul style="list-style-type: none"> ▪ Ratio of brownfield site development to greenfield sites. ▪ Percentage of unaccounted water loss. ▪ Compliance with discharge limits. 	<ul style="list-style-type: none"> ▪ An increase in provision of cycle lanes and pedestrian routes. ▪ Increase re-use of brownfield sites for development in preference to greenfield sites. 	<ul style="list-style-type: none"> ▪ Consultations with Regional Waste Authority (every 2 years). Consultations with Department of Environment, Climate and Communications (every 2 years). ▪ MCC monitoring of likely significant environmental effects of grants of permission (every 2 years).

11 Conclusion

The assessment of the Plan has concluded that its objectives are acceptable and represent a balanced and fair approach to the sustainable development of the county. Monitoring of the Plan throughout its lifetime will ensure that any *potential adverse* environmental impacts, unforeseen at this stage will be identified early, so as to prevent any deterioration of the environment. The Plan balances growth with environmental protection and can deliver a sustainable future for the inhabitants of the area.

Taking into account the mitigation measures which has been integrated into the Plan, it has been determined that significant residual adverse environmental effects will not occur as a result of the implementation of the Plan.

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