

SEA ENVIRONMENTAL REPORT

APPENDIX III – NON-TECHNICAL SUMMARY

FOR THE

OFFALY COUNTY DEVELOPMENT PLAN 2021-2027

for: Offaly County Council

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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report for the Offaly County Development Plan 2021-2027 (hereafter referred to as 'the Plan'). The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan. The Environmental Report has been prepared as part of a Strategic Environmental Assessment (SEA) process for the Plan.

What is SEA?

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

Why is SEA needed? The Benefits

The SEA has been carried out in order to comply with the provisions of the European SEA Directive and in order to enable sustainable development and environmental protection and management. SEA is the planning authority's and the public's guide to what are generally the best areas for development in the County.

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

An overlay of environmental sensitivities in County Offaly are shown on Figure 1.1.

The most sensitive areas in the County include:

- Upland areas, including the Slieve Bloom Mountains and Croghan Hill - on account of ecological and land cover sensitivities, areas of high amenity designation and/or nutrient sensitivity in surface waters;
- The Callows of the River Shannon and Little Brosna - on account of ecological and land cover sensitivities, areas of high amenity designation, nutrient sensitivity in surface waters and surface waters that supply drinking water;
- Individual rivers throughout the County;
- Raised bogs across lowlands and blanket bogs in the Slieve Blooms; and
- Areas of elevated groundwater vulnerability throughout the County, including areas of extreme vulnerability in the uplands in the south-east of the County.

The Plan directs incompatible development away from the most sensitive areas in the County and focuses on directing: compact, sustainable development within the existing envelopes of the County's towns and villages; and sustainable development elsewhere, including in rural areas. Development of these generally more robust, well-serviced and well-connected areas of the County will contribute towards environmental protection and sustainable development, including climate mitigation and adaptation.

Compact development can be accompanied by placemaking initiatives to enable the County's towns and villages to become more desirable places to live – so that they maintain populations and services.

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

How does the SEA work?

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

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

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

Difficulties Encountered during the SEA process

No significant difficulties have been encountered during the undertaking of the assessment to date. There was limited water services information available for some settlements within the County however objectives requiring the provision of appropriate levels of water services alongside new development have been integrated into the Plan.

What happens at the end of the process?

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

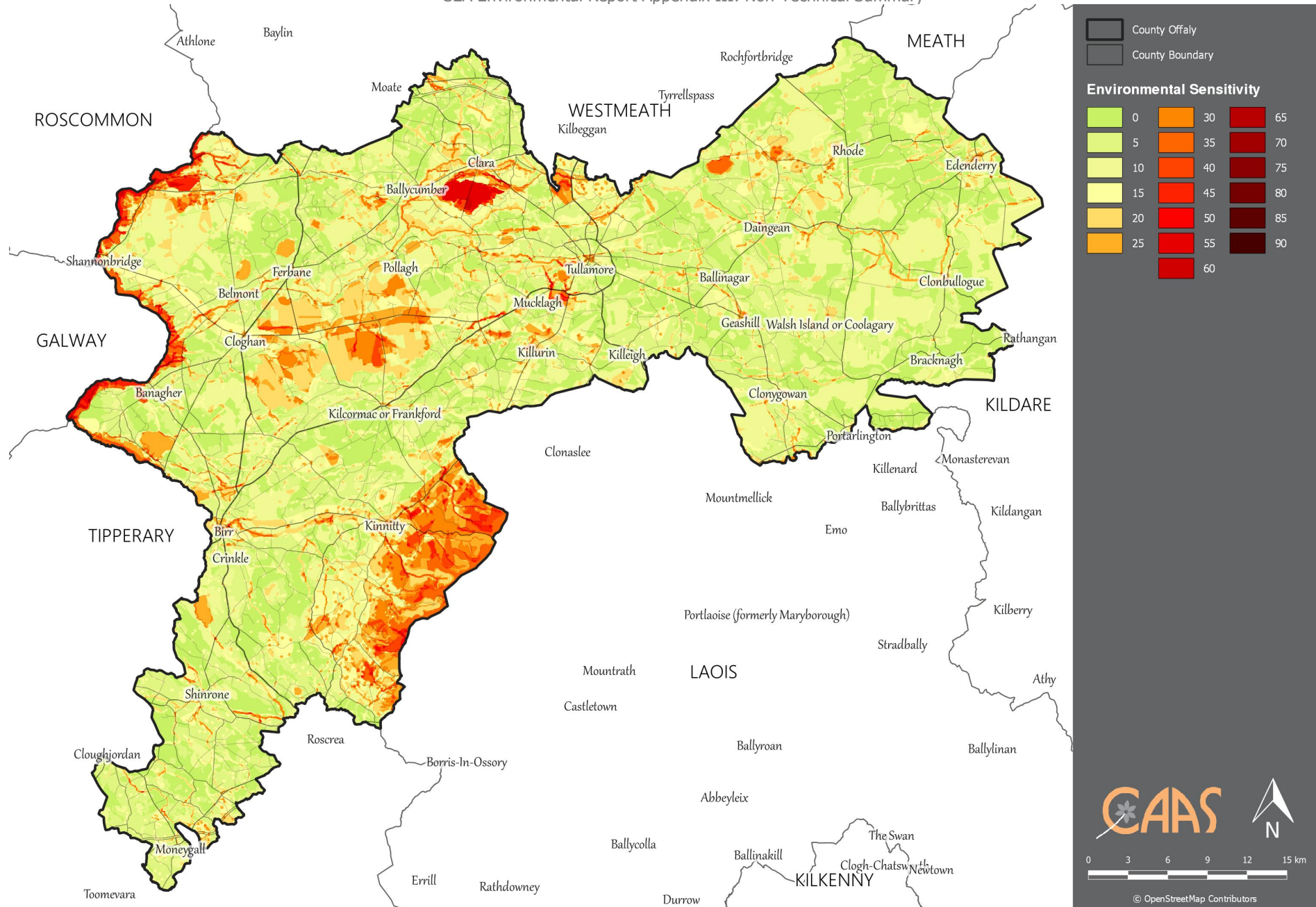


Figure 1.1 Environmental Sensitivities that the County Development Plan directs incompatible development away from CAAS for Offaly County Council

Section 2 The Plan

2.1 Introduction

The Offaly County Development Plan is a land use plan and overall strategy for the proper planning and sustainable development of the functional area of County Offaly over the six-year period 2021-2027.

2.2 Content of the Plan

The Plan includes a Written Statement, that provides the development policies, Core Strategy and mandatory and discretionary objectives for different policy areas addressed by the Development Plan, and Settlement Plans for the county's towns, villages and Sráids.

The Written Statement is divided into 13 separate chapters setting out various policies and objectives under the headings of:

- Chapter 1 Introduction
- Chapter 2 Core Strategy, Settlement Strategy, Housing Strategy
- Chapter 3 Climate Action and Energy
- Chapter 4 Biodiversity and Landscape
- Chapter 5 Economic Development
- Chapter 6 Tourism and Recreational Development
- Chapter 7 Retail & Town Centre Strategy, and Regeneration
- Chapter 8 Sustainable Transport Strategy
- Chapter 9 Social Inclusion, Community and Cultural Development
- Chapter 10 Built Heritage
- Chapter 11 Water Services and Environment
- Chapter 12 Land Use Objectives
- Chapter 13 Development Management Standards

2.3 Plan Strategic Vision and Objectives

The Plan's Strategic Vision is:

To create a sustainable and competitive county that supports the health and wellbeing of our people and places, from urban to rural, with access to employment opportunities supported by high quality housing and physical, social and community infrastructure for all, in a climate resilient manner and with respect for our biodiversity.

The Development Plan presents an opportunity to shape the future growth of Offaly to plan for and support the sustainable long-term development of the county. The Plan aims to build on our previous successes and to strengthen our strategic advantages as a County, to ensure that we utilise the strengths of our citizens, communities, built and natural heritage, infrastructure and tourism to their full potential. The Strategic Objectives of the County are to:

- i. Plan for a population increase in County Offaly during the plan period of 9,239 persons.
- ii. Consolidate settlements to avoid undesirable and inefficient sprawl. This will be achieved through targeting a significant proportion of future development on infill/ brownfield/ underutilised sites within the existing built-up footprint of all settlements in accordance with the principle of Compact Growth set out in the National Planning Framework.
- iii. Ensure better alignment between the location of population growth and employment growth. This will allow settlements to become more self-sustaining, sustainable and balanced rather than based on long distance commuter driven activity.
- iv. Reduce car dependency, and increase the use of sustainable mobility such as walking, cycling and public transport through planning for and encouraging integrated transportation and landuse.
- v. Direct a significant proportion of the county's development and population growth into Tullamore a Key Town as designated in the Regional Spatial and Economic Strategy in order to build up its critical mass and fulfil its role as a key growth driver of the county and midland region.
- vi. Reverse the decline / stagnation of towns and villages through renewal and regeneration, and create healthy place-making by improving the attractiveness, quality, design, viability, vibrancy and liveability of the county's settlements. Also to manage urban generated growth in Rural Areas under Strong Urban Influence and Stronger Rural Areas.
- vii. Protect and enhance Offaly's natural assets of clean water, biodiversity, landscape, green infrastructure, heritage and agricultural land.
- viii. Provide high quality housing of a sufficient scale, mix, tenure, sequence and density, located in optimum locations and aligned with adequate infrastructure, services and amenities.
- ix. Make more efficient use of key resources such as land, water, energy, waste and transportation infrastructure.

- x. Create a competitive business environment supporting economic development, job creation, tourism and prosperity for all.
- xi. Achieve transition to a competitive, low carbon, climate resilient and environmentally sustainable economy. This should be facilitated through reducing the need to travel, by integrating land use and sustainable modes of transport, and by reducing the use of non-renewable resources. In line with this, promote active and healthy lifestyles through increased opportunities for walking, cycling and active sport recreation.
- xii. Encourage inclusive and active sustainable communities based around a strong network of community facilities and amenities.

Contribute, as practicable, towards achievement of the 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development as outlined in Figure 1.2.

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

Far in advance of both the submission of the pre-Draft Plan to the Elected Members for approval and the placing of the Draft Plan on public display, Offaly County Council undertook various works in order to inform the preparation of the Plan.

The findings of this strategic work have been integrated into the Plan and will contribute towards both environmental protection and management and sustainable development within the County.

Strategic work undertaken by the Council includes background work in relation to Plan Strategies and other provisions for a variety of sectors including:

- Strategic Environmental Assessment;
- Appropriate Assessment¹;
- Strategic Flood Risk Assessment²;
- Record of Protected Structures;
- Core Strategy;
- Housing Strategy including a Housing Need Demand Assessment;
- Economic Development;
- Wind Energy Strategy;
- Climate Action; and
- Transport.

The undertaking of this SEA process and associated Appropriate Assessment and Strategic Flood Risk Assessment processes were part of this strategic work and contributed towards the integration of environmental considerations into individual Plan provisions as detailed in Section 6 of this report.

2.5 Relationship with other relevant Plans and Programmes

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

The Plan sits within a hierarchy of statutory documents setting out public policy for, among other things, land use planning, infrastructure, sustainable development, tourism, environmental protection and environmental management. The Plan must comply with relevant higher-level strategic actions and will, in turn, guide lower level strategic actions. These documents include plans and programmes such as those described under Section 3, Section 4 and Section 6 of this summary. These documents have been subject to their own environmental assessment processes, as relevant.

The National Planning Framework (NPF) sets out Ireland's planning policy direction up to 2040. The NPF is to be implemented through Regional Spatial and Economic Strategies (RSEs) and lower tier Development Plans and Local Area Plans. The RSEs for the Eastern & Midlands Region sets out objectives for land use planning, tourism, infrastructure, sustainable development, environmental protection and environmental

¹ Stage 2 Appropriate Assessment (AA) is being undertaken alongside the preparation of the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The AA assesses the effects of the Plan on European Sites designated for certain habitats and species. The conclusion of the AA is that the Plan will not affect the integrity of the Natura 2000 network.

² Strategic Flood Risk Assessment (SFRA) is being undertaken alongside the preparation of the Plan. SFRA is required by 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of Environment and Office of Public Works, 2009) and associated Department of the Environment, Community and Local Government Circular PL2/2014. The recommendations from the SFRA have been integrated into the Plan.

management that have been subject to environmental assessment and must be implemented through the County Development Plan.

As required by the Planning and Development Act 2000, as amended, the County Development Plan is consistent with and conforms with national and regional policies, plans and programmes, including the NPF and the RSES for the Eastern & Midlands Region. The County Development Plan may, in turn, guide lower level strategic actions, such as the Tullamore, Birr, Edenderry and Portarlinton Local Area Plans that will be subject to their own lower-tier environmental assessments.

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

Section 3 The Environmental Baseline

3.1 Introduction

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

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

In the absence of a new Plan it is uncertain how permission for new development would be applied for and considered.

The 2014-2020 Plan has contributed towards environmental protection within County Offaly. If the 2014-2020 Plan was to expire and not be replaced by the 2021-2027 Plan, this would result in a deterioration of the County's planning and environmental protection framework. Although higher level environmental protection objectives – such as those of various EU Directives and transposing Irish Regulations – would still apply, the deterioration 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 adverse effects on all environmental components, especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact.

Such adverse effects could include:

- Arising from both construction and operation of development and associated infrastructure:
 - Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna;
 - Habitat loss, fragmentation and deterioration, including patch size and edge effects; and
 - Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species such as birds and bats.
- Potential adverse effects arising from flood events.
- Potential interactions if effects arising from environmental vectors.
- Potential adverse effects on the hydrogeological and ecological function of the soil resource, including as a result of development on contaminated lands.
- Potential for riverbank erosion.
- Potential adverse effects upon the status of water bodies and entries to the WFD Register of Protected Areas (ecological and human value), arising from changes in quality, flow and/or morphology.
- Increase in flood risk and associated effects associated with flood events.
- Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts).
- Failure to adequately treat surface water run-off that is discharged to water bodies (water services infrastructure and capacity ensures the mitigation of potential conflicts).
- Failure to comply with drinking water regulations and serve new development with adequate drinking water (water services infrastructure and capacity ensures the mitigation of potential conflicts).
- Increases in waste levels.
- Potential impacts upon public assets and infrastructure.
- Interactions between agricultural waste and soil, water, biodiversity and human health – including as a result of emissions of ammonia from agricultural activities (e.g. manure handling, storage and spreading) and the production of secondary inorganic particulate matter.
- Potential conflict between development under the Plan and aiming to reduce carbon emissions in line with local, national and European environmental objectives.
- Potential conflicts between transport emissions, including those from cars, and air quality.
- Potential conflicts between increased frequency of noise emissions and protection of sensitive receptors.
- Potential conflicts with climate adaptation measures including those relating to flood risk management.
- Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.
- Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape.

3.3 Biodiversity and Flora and Fauna

Ecologically sensitive areas in Offaly include: the Slieve Bloom Mountains and Croghan Hill; raised bogs across lowlands; Callows of the River Shannon and Little Brosna; the salmonid River Boyne; woodlands; grasslands; eskers; trees; and hedgerows. These habitats support a variety of species and ecosystems that contribute to the unique biodiversity of County Offaly.

Designated sites within the County include Special Areas of Conservation³ (SACs) and Special Protection Areas⁴ (SPAs). These are mapped on Figure 3.1. There are number of SACs designated within and adjacent to the County including: River Shannon Callows SAC; Clara Bog SAC; Island Fen SAC; Slieve Bloom Mountains SAC; River Barrow and River Nore SAC; All Saints Bog SPA; Dovegrove Callows SPA; Middle Shannon Callows SPA; Mongan Bog SPA; River Little Brosna Callows SPA; and Slieve Bloom Mountains SPA.

Other ecological designations occur within and adjacent to the County and these are detailed in the main SEA Environmental Report.

CORINE⁵ land cover mapping for the County is shown on Figure 3.2. The most dominant land cover types are pastures and peat bogs. Categories from CORINE mapping that may indicate areas likely to contain Annex I habitats, in the County, include: peat bogs; natural grassland; water bodies; mixed forests; coniferous forest; broad-leaved forests; stream courses; water bodies; transitional woodland and scrub; and land principally occupied by agriculture with areas of natural vegetation.

Existing Problems

Ireland's Article 17 report on the Status of EU Protected Habitats and Species in Ireland (DCHG, 2019) identifies various Irish, EU-protected habitats and species to be of unfavourable status and many to be still declining, although it also identifies that a range of positive actions are underway. Categories for pressures and threats on Ireland's habitats and species identified by the report comprise:

- Agriculture;
- Forestry;
- Extraction of resources (minerals, peat, non-renewable energy resources);
- Energy production processes and related infrastructure development;
- Development and operation of transport systems;
- Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas;
- Extraction and cultivation of biological living resources (other than agriculture and forestry);
- Military action, public safety measures, and other human intrusions;
- Alien and problematic species;
- Mixed source pollution;
- Human-induced changes in water regimes;
- Natural processes (excluding catastrophes and processes induced by human activity or climate change);
- Geological events, natural catastrophes;
- Climate change; and
- Unknown pressures, no pressures and pressures from outside the Member State.

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

Previous changes in land uses arising from human development have resulted in a loss of biodiversity and flora and fauna however, legislative objectives governing biodiversity and fauna were not identified as being conflicted with.

³ SACs have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) due to their conservation value for habitats and species of importance in the European Union. The Habitats Directive seeks to establish Natura 2000, a network of protected areas throughout the EU. It is the responsibility of each member state to designate SACs to protect habitats and species, which, together with the SPAs designated under the 1979 Birds Directive, form Natura 2000. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010. The Regulations have been prepared to address several judgments of the Court of Justice of the European Union (CJEU) against Ireland, notably cases C-418/04 and C-183/05, in respect of failure to transpose elements of the Birds Directive and the Habitats Directive into Irish law.

⁴ SPAs have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) - referred to as the Birds Directive - due to their conservation value for birds of importance in the EU.

⁵ The CORINE (Coordinated Information on the Environment) land cover data series was devised as a means of compiling geo-spatial environmental information in a standardised and comparable manner. CORINE has become a key data source for informing environmental and planning policy on a national and European level. The main land cover type in Ireland is agricultural land including forestry, which accounts for two-thirds of the national landmass. Most of this is permanent grassland pastures. Peatlands and wetlands are the second most widespread land cover type, covering almost one-fifth of the country. While forested areas cover about one-tenth of the country. Despite rapid development in the past two decades, Ireland's landscape is predominantly rural and agricultural.

3.4 Population and Human Health

The Census 2016 results show that Offaly's population has grown by 1,274 persons, or by 1.6%, since Census 2011, to 77,961 persons (Central Statistics Office, 2017).

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

- Recreational and development pressure on habitats and landscapes;
- Increase in demand for waste water treatment at the municipal level;
- Increase in demand for water supply and associated potential impact of water abstraction from Lough Owel, Lough Lene and Lough Bane;
- Potential interactions in flood-sensitive areas; and
- Potential effects on water quality.

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

Existing Problems

There is historic and predictive evidence of flooding in various locations across the County.

The greatest health risk from radiation in Ireland is caused by radon. The presence of radon gas, a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils, occurs across the country. The number of homes within the County with radon levels above the reference level is within the normal range experienced in other locations across the country.

3.5 Soil

Luvisols⁶ and peat soils are the two most dominant soil types across the County. Other soil types identified include:

- Alluvial soils⁷ (in the flood plains of the rivers and streams);
- Groundwater and Surface Water Gleys⁸ (in depressions in the upper reaches of river valleys in both uplands and lowlands); and
- Brown earths⁹ (in the south, south-west and north of the County).

Peatlands are a very characteristic habitat in County Offaly, with groundwater and rain fed peat soils being a prominent and typical feature in the landscape. Rain-fed (ombrotrophic) and groundwater-fed (minerotrophic) peat soils occurring in the County are often subject to ecological designations.

Esker systems within the County provide for high habitat diversity and their thin, alkaline soils support rare plants species.

An audit of County Geological Sites in County Offaly was completed in 2016. There are 28 County Geological Sites across the County.¹⁰

Source Protection Area delineation provides an assessment of the land area that contributes groundwater to a borehole or spring. Source reports have been undertaken by the GSI on behalf of Local Authorities since the mid-1990s. There are various Source Protection Areas identified within County Offaly.

⁶ Luvisol soils are generally fertile, widely used for agriculture and associated with significant accumulation of clay.

⁷ These are associated with alluvial (clay, silt or sand) river deposits.

⁸ Surface Water Gleys are wetland soils with slowly permeable horizons resulting in seasonal waterlogging.

⁹ Brown earths are well drained mineral soils, associated with high levels of natural fertility.

¹⁰ Individual audited site reports for County Offaly s available from the GSI (www.gsi.ie).

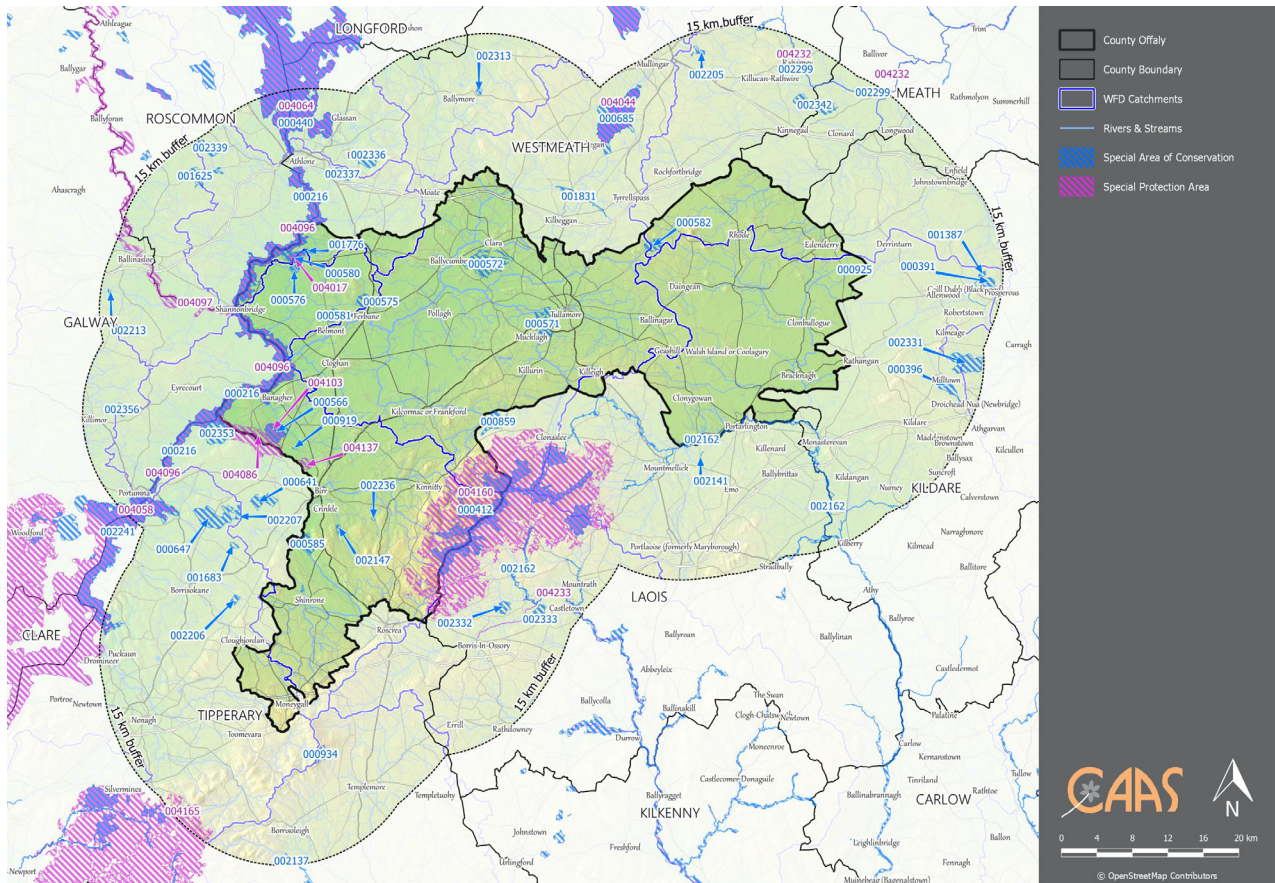


Figure 3.1 European Sites within and adjacent to the County

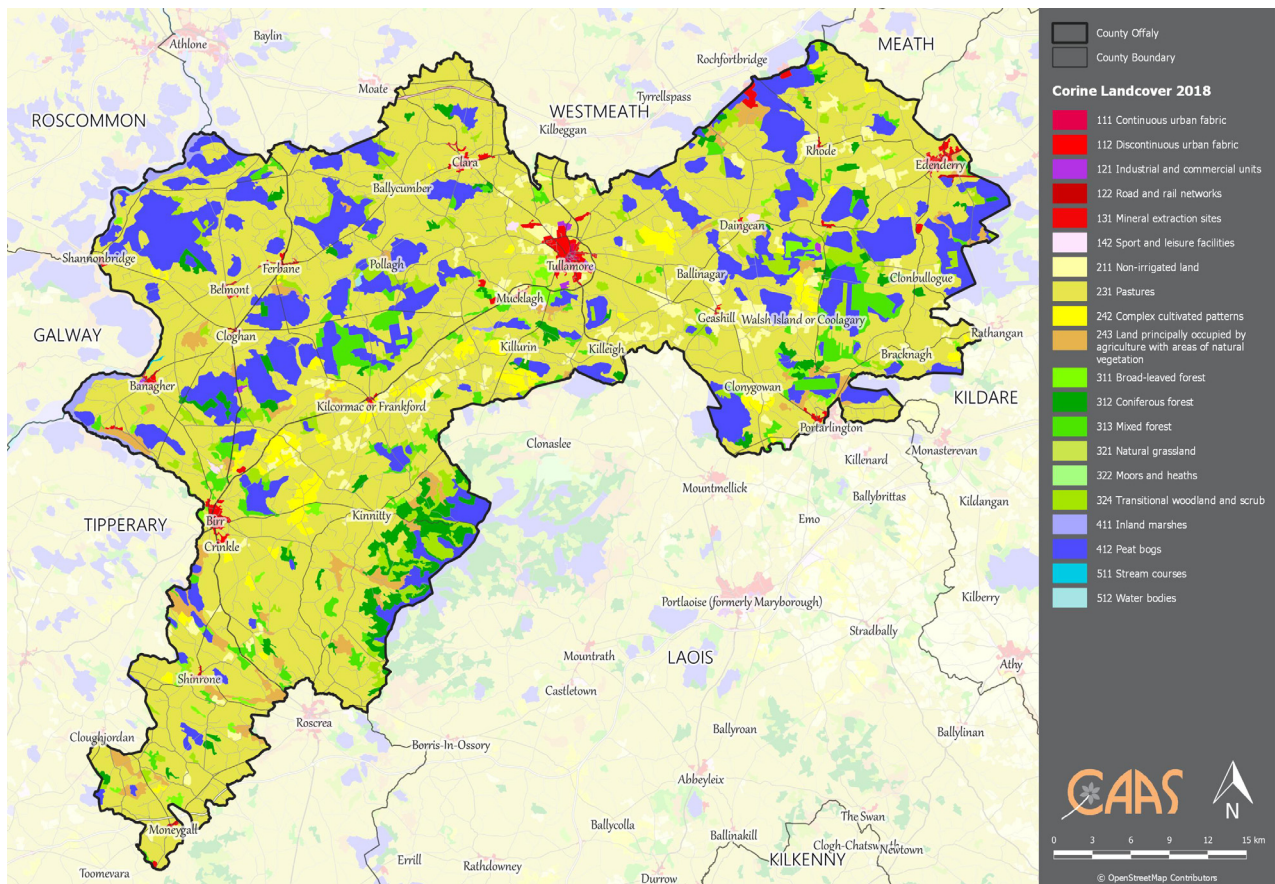


Figure 3.2 CORINE Land Cover Mapping 2018

3.6 Water

Surface and Ground Water Status

Lakes, rivers and their tributaries in the County range in status from *high* and *good*, to *moderate* and *poor*. *Moderate* and *poor* status water bodies have the potential to fail the requirement of *good* status set out by the Water Framework Directive (WFD). In addition, there are a number of unassigned rivers and lakes across the County. The WFD surface water status (2013-2018) of rivers and lakes within and surrounding the County is shown on Figure 3.3.

The WFD status (2013-2018) of most of groundwater underlying the County is identified as being of *good status*, meeting the objectives of the WFD. The area including and around Clara Bog is identified as being of *poor* groundwater body status.

Aquifer Vulnerability and Productivity

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter into groundwater. The aquifers underlying most the County are generally classified as being of *high* or *moderate vulnerability*. *Areas of extreme* or *low vulnerability* are found across smaller areas.

Flooding

Certain areas across the County are at risk from groundwater, pluvial and fluvial flooding. Historical flooding is documented at various locations across the County, including at settlements along the Rivers Shannon and Brosna.

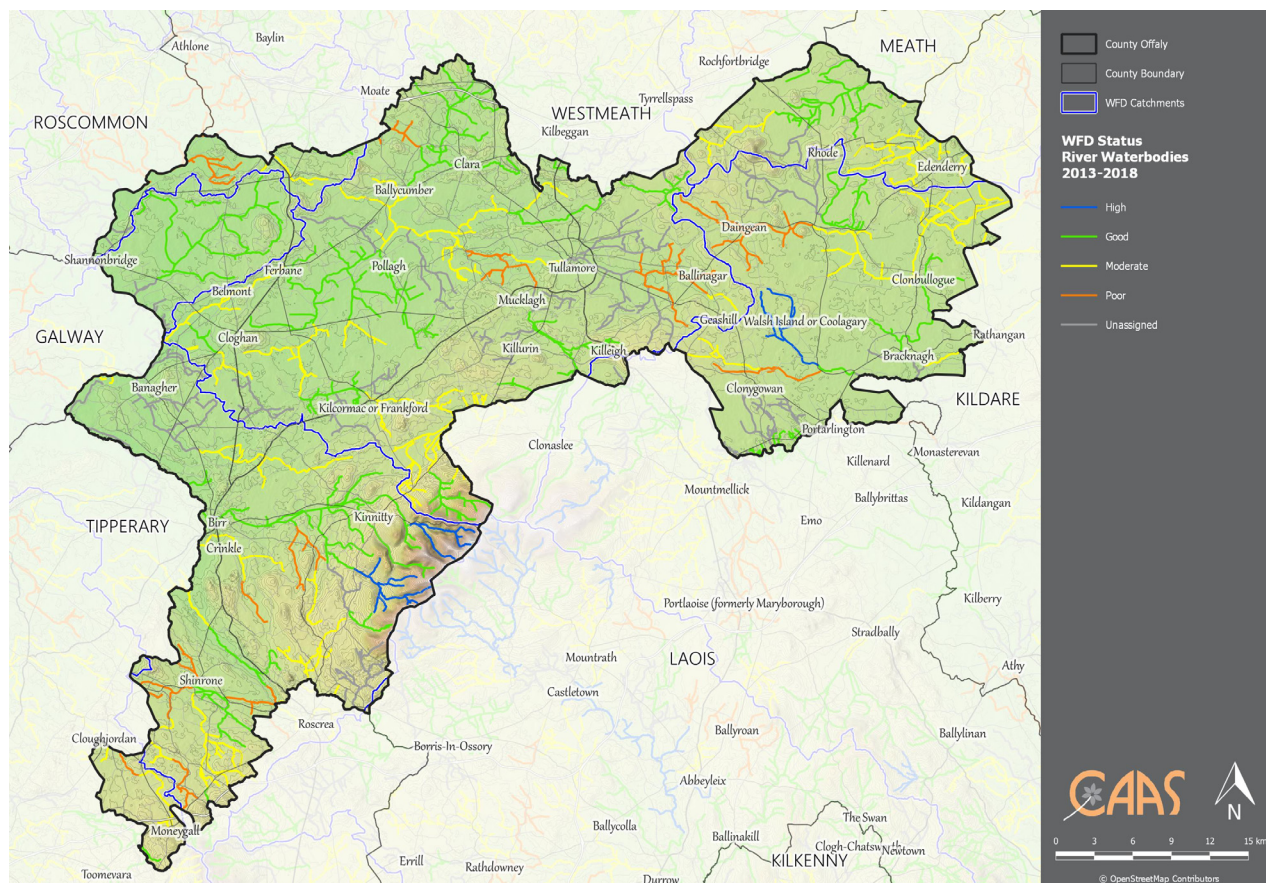


Figure 3.3 Surface Water Status (2013-2018)

3.7 Air and Climatic Factors

Total emissions of greenhouse gases by humans come from various sectors including transport, agriculture, energy industries, manufacturing combustion, industrial processes, residential developments, commercial services developments, waste management processes and fluorinated gases equipment (such as refrigeration and fire protection systems). Ireland's National Policy position is to reduce CO₂ emissions in 2050 by 80% on 1990 levels across the Energy Generation, Built Environment and Transport sectors, with

a goal of Climate neutrality in the Agriculture and Land-Use sector. For 2017, total national greenhouse gas emissions are estimated to be 0.9% lower than emissions in 2016.

The National Mitigation Plan (Department of Communications, Climate Action and Environment, 2017), represents an initial step to set Ireland on a pathway to achieve the level of decarbonisation required. It is a whole-of-Government Plan, reflecting in particular the central roles of the key Ministers responsible for the sectors covered by the Plan – Electricity Generation, the Built Environment, Transport and Agriculture, as well as drawing on the perspectives and responsibilities of a range of other Government Departments. The National Adaptation Framework (Department of Communications, Climate Action and Environment, 2018), sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation. Under the Framework, a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for.

The National Climate Action Plan 2019 is an all of Government plan to tackle climate change and bring about a step change in Ireland's climate ambition over the coming years. The plan sets out an ambitious course of action over the coming years to address the diverse and wide-ranging impacts climate disruption is having on Ireland's environment, society, economic and natural resources. 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, climate-resilient, and environmentally sustainable society and economy by 2050.

The Climate Change Advisory Council's Annual Review 2019 identifies that the most recent projections demonstrate that, under different assumptions, Ireland will not meet its emissions reduction targets, even with the additional policies and measures included in the National Development Plan. The projections also show that progress on reducing emissions is sensitive to the future path of fuel prices. A significant and sustained rate of emissions reduction of approximately -2.5% per year is required to meet our objectives for 2050. However, it must be noted that additional measures within the recent Climate Action Plan are not included in the analysis to date.

The EPA's (2020) *Air Quality in Ireland 2019* identifies that:

- Air quality in Ireland is generally good however there are localised issues;
- Nitrogen dioxide (NO₂) from transport emissions is polluting urban areas; and
- Ireland was above World Health Organization air quality guideline value levels at 33 monitoring sites – mostly due to the burning of solid fuel within settlements across the country.

In order to apply with European Directives relating to air quality, the EPA manages the National Ambient Air Quality Network and measures the levels of a number of atmospheric pollutants at locations across the country. The current¹¹ air quality in the Leinster Air Quality Region is identified by the EPA as being *good*.

3.8 Material Assets

Other material assets, in addition to those referred to below, covered by the SEA include archaeological and architectural heritage (see Section 3.9) natural resources of economic value, such as water and air (see Sections 3.6 and 3.7).

Public Assets and Infrastructure

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

Waste Water

Offaly County Council operates 27 public waste water treatment plants. In unserved areas and outside the main towns and villages, the main method of sewage disposal is by means of individual septic tanks and proprietary waste water treatment systems. Two of the 27 plants service urban areas that are listed as

¹¹ 07/04/2020 (<http://www.epa.ie/air/quality/>)

Priority Areas where improvements are required to resolve urgent environmental issues with respect to waste water treatment (EPA, 2019):

- Tullamore (waste water discharges cause a significant pressure on the River Tullamore); and
- Kilcormac (where waste water discharges cause a significant pressure on the River Silver).

Irish Water, working in partnership with Offaly County Council, is making investments to undertake essential upgrade works to waste water treatment plants in towns and villages across the County. The upgrading of infrastructure will contribute towards compliance with the Water Framework Directive, EU Urban Waste Water Treatment Directive and Drinking Water Regulations and will help to protect human health and maintain the quality of surface and ground waters.

Water Supply

There are 24 Public Water Supply Schemes in County Offaly, 14 Public Group Water Schemes and 15 Private Group Water Schemes. Private water supplies provide an alternative for areas that are not served by public water supply infrastructure and comprise mainly of wells and group water schemes.

The EPA publishes their results in annual reports that are supported by Remedial Action Lists (RALs). The RAL identifies water supplies that are not in compliance with Drinking Water Regulations. The Clara/Ferbane Regional Public Supply Scheme is listed on the most recent EPA Remedial Action List (Q4 of 2019). There is a proposed plan of action to remedy the issue at this scheme.

Waste Management

Waste management across the County is guided by the Eastern and Midlands Region Waste Management Plan 2015-2021.

Transport

Road and rail infrastructure in the County has the potential to support reductions in energy demand from the transport sector, including through electrification of modes.

Existing Problems

There are a number of challenges with respect to the provision of water services infrastructure, some of which are summarised above.

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

3.9 Cultural Heritage

Archaeological Heritage

Archaeological heritage is protected under the National Monuments Acts (1930-2004), National 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. Clusters of monuments in County Offaly are located within the County's settlements.

County Offaly has a significant archaeological heritage, with over 4,000 archaeological sites dating back to the Mesolithic period, around 7,000 B.C as documented by the National Monuments Service. There are number of Monuments Protected by Preservation Order in the County, including: ecclesiastical remains in Clonmacnoise; cemetery and enclosure in Derryvilla; Motte castle earthworks in Rathlilhen; Clonony castle; and Coole castle. Clonmacnoise is an example of an early medieval ecclesiastical site of national and international importance as a spiritual, historic, archaeological and cultural centre. The site is located on the River Shannon and is representative of a significant stage in the development of Early Medieval Christianity. The Monastic City of Clonmacnoise and its cultural landscape is currently listed as a Tentative World Heritage Site by UNESCO.

Architectural Heritage

Records of Protected Structures are legislated for under Section 12 and Section 51 of the Planning and Development Act 2000 as amended. Protected structures are defined in the Planning and Development Act 2000 as amended as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. Similar to the general

spatial spread of archaeological heritage, clusters of architectural heritage are indicated within the County's settlements.

In addition to Protected Structures, the Planning and Development Act, 2000 provides the legislative basis for the protection of Architectural Conservation Areas (ACAs). The ACA designation requires that planning permission must be obtained before significant works can be carried out to the exterior of a structure in the ACA that might alter the character of the structure or the ACA. There is one ACA designated within County Offaly, that of Geashill Village.

Existing Problems

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

3.10 Landscape

Offaly has a diverse landscape, with Slieve Bloom Mountains in the south-west, River Shannon Callows in the west and many peatlands, grasslands, woodlands, eskers and wetlands in various locations across the County. There are a range of different landscapes found in Offaly, each with varying visual and amenity values, topography, exposure levels and contain a variety of habitats. Each landscape type has varying capacity to absorb development related to its overall sensitivity.

The County Offaly Landscape Character Assessment has identified the following high sensitivity areas within the County include: the River Shannon and Callows; the Grand Canal Corridor; Wetlands; Slieve Bloom Upland Area; Croghan Hill and its Environs; Raised and Blanket Bogland Areas; the Esker Landscape; and Archaeological and Historical Landscapes.

Areas of High Amenity have been identified by the Council to facilitate the protection and enhancement of areas of scenic and amenity value in County Offaly that are worthy of special protection in order to preserve their uniqueness and amenity value. These include the following and are mapped on Figure 3.4:

- Waterways and Wetlands (including River Shannon and Callows, Grand Canal, Lough Boora Discovery Park and Pallas Lake);
- Upland Areas (Slieve Bloom Mountains and Croghan Hill);
- Peatlands (Clara Bog and Raheenmore Bog);
- Eskers (Eiscir Riada, Clara Eskers and Other Eskers); and
- Archaeological and Historical (Clonmacnoise and Durrow Monastic Site and Demesne).

The Council recognises the need to protect the character of the County by protecting Key Scenic Views and Key Prospects. There are 19 Protected Views identified in the County and these are mapped on Figure 3.4 alongside Key Amenity Routes that offer a very attractive cross-sectional view and overall impression of differing landscapes within Offaly as one traverses the County.

Existing Environmental Problems

New developments have resulted in changes to the visual appearance of lands within the County however legislative objectives governing landscape and visual appearance were not identified as being conflicted with

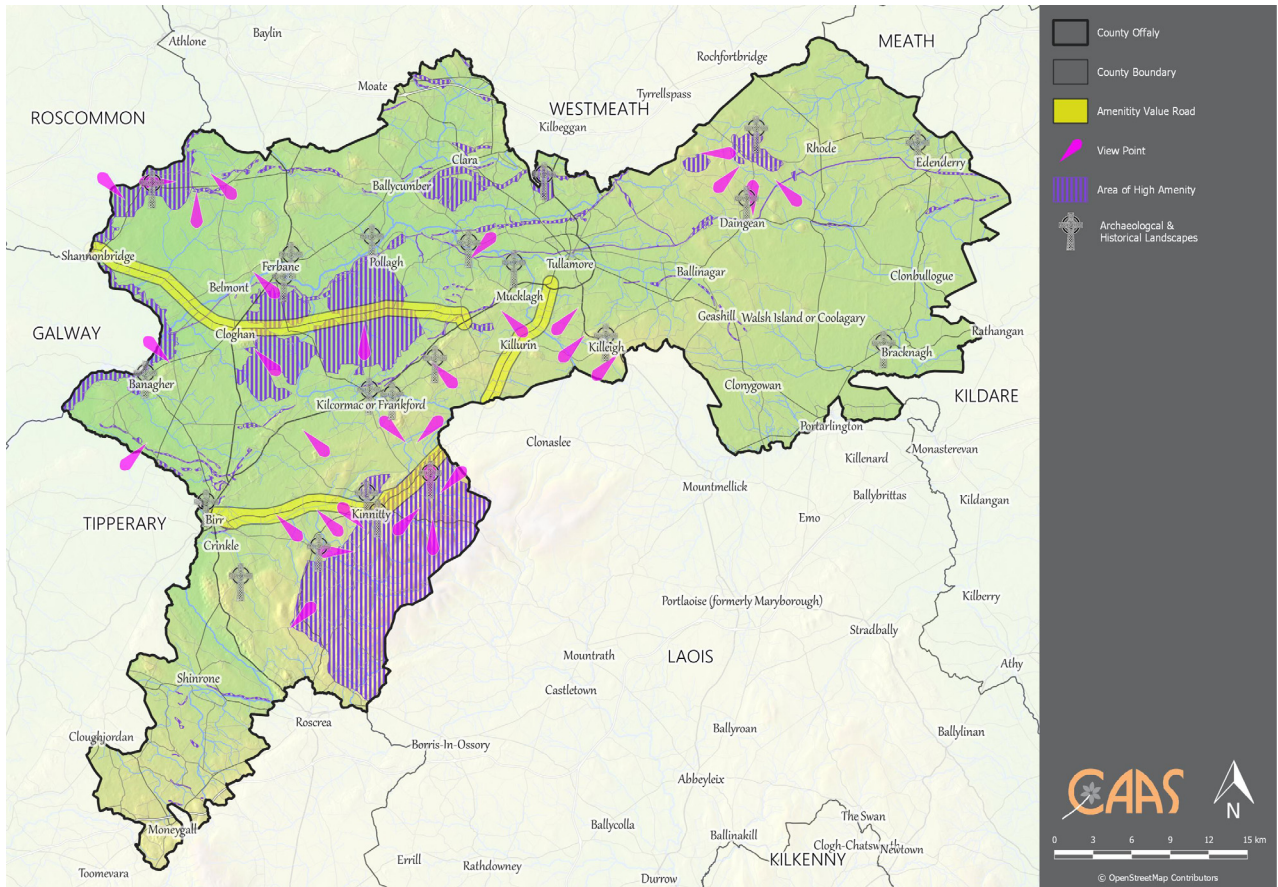


Figure 3.4 Landscape Designations

3.11 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies that generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives that have been transposed into Irish law and that are required to be implemented. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

Table 3.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
Biodiversity, Flora and Fauna	BFF	No net contribution to biodiversity losses or deterioration	<ul style="list-style-type: none"> To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species Enhance biodiversity in line with the National Biodiversity Strategy and its targets To protect, maintain and conserve the County's natural capital
Population and Human Health	PHH	Improve quality of life for all ages and abilities based on high-quality, serviced, well connected and sustainable residential, working, educational and recreational environments	<ul style="list-style-type: none"> Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management Ensure that existing population and planned growth is matched with the required public infrastructure and the required services Safeguard the County's citizens from environment-related pressures and risks to health and well-being
Soil (and Land)	S	Ensure the long-term sustainable management of land	<ul style="list-style-type: none"> Protect soils against pollution, and prevent degradation of the soil resource Promote the sustainable use of infill and brownfield sites over the use of greenfield within the County Safeguard areas of prime agricultural land and designated geological sites

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Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
Water	W	Protection, improvement and sustainable management of the water resource	<ul style="list-style-type: none"> • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and County growth targets in the context of existing and projected water supply and waste water capacity constraints ensuring the protection of receiving environments • Avoid inappropriate zoning and development in areas at risk of flooding and areas that are vulnerable to current and future erosion • Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposals
Material Assets	MA	Sustainable and efficient use of natural resources	<ul style="list-style-type: none"> • Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County • Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, wave solar, tidal, biomass, energy from waste and traditional fossil fuels • Promote the circular economy, reduce waste, and increase energy efficiencies • Ensure there is adequate sewerage and drainage infrastructure in place to support new development • Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes • Encourage the transition to a zero-carbon economy by facilitating the development of a grid infrastructure to support renewables and international connectivity. Reduce the average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart- buildings, cities and grids
Air	A	Support clean air policies that reduce the impact of air pollution on the environment and public health	<ul style="list-style-type: none"> • To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture. • Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency. • Promote continuing improvement in air quality. • Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution • Meet Air Quality Directive standards for the protection of human health – Air Quality Directive • Significantly decrease noise pollution by 2020 and move closer to WHO recommended levels.
Climatic Factors¹²	C	Achieving transition to a competitive, low carbon, climate-resilient economy that is cognisant of environmental impacts	<ul style="list-style-type: none"> • To minimise emissions of greenhouse gases. • Integrate sustainable design solutions into the County's infrastructure (e.g. energy efficient buildings; green infrastructure). • Contribute towards the reduction of greenhouse gas emissions in line with national targets. • Promote development resilient to the effects of climate change • Promote the use of renewable energy, energy efficient development and increased use of public transport
Cultural Heritage	CH	Safeguard cultural heritage features and their settings through responsible design and positioning of development	<ul style="list-style-type: none"> • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage
Landscape	L	Protect and enhance the landscape character	<ul style="list-style-type: none"> • To implement the Plan's framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention

¹² Please also refer to relevant legislation and requirements under Section 4.10, Section 8.8.3 and Appendix I of the main SEA Environmental Report. Targets under the national Climate Action Plan are reviewed and updated periodically and include those under the headings of Electricity, Built Environment, Transport, Agriculture, Forestry & Land Use and Enterprise.

Section 4 Alternatives

4.1 Introduction

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

Whether or not alternatives for the County Development Plan are available has been identified by Offaly County Council.

4.2 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 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 Midland Region. These documents set out various requirements for the content of the Plan including on topics such as land use zoning and the sustainable development of rural areas.

4.3 Alternatives for Population Allocations

Description

Following allocation of most of the County's projected new population across the County's settlements, taking into account the requirements of higher level planning objectives, a decision was required as to whether to provide for an unallocated extent of growth – either to the Self-Sustaining Towns of Edenderry or Portarlington or to the County's Key Town of Tullamore or Self Sustaining Growth Town of Birr.

- A.** Provide additional extent of growth to Tullamore or Birr; or
- B.** Provide additional extent of growth to Edenderry or Portarlington.

Evaluation

Edenderry and Portarlington have experienced rapid population growth with high levels of commuter focused residential expansion without equivalent increase in jobs and services. They have been identified by the Planning Department as needing consolidation and targeted 'catch up' investment in services, infrastructure, suitable transport options, amenities and local employment to become more self-sustaining.

Consequently, the key environmental differential factor between the two alternatives as a result of providing an additional extent of unquantified population allocation to either Tullamore or Birr (Alternative A) or Edenderry or Portarlington (Alternative B) relates to transport and associated emissions (interacting with Population and Human Health, Material Assets, Air and Climatic Factors – see Table 3.1 above).

Allocation of an additional extent of growth to Edenderry or Portarlington would potentially hinder the aforementioned needs being met and would be likely to result in higher levels of commuting, potentially conflicting with both efforts to improve sustainable mobility and greenhouse gas emission reduction targets the most.

Allocation of an additional extent of growth to Tullamore or Birr would be likely to result in lower levels of commuting, potentially conflicting with both efforts to improve sustainable mobility and greenhouse gas emission reduction targets the least.

All other environmental effects would be considered to be mitigated to similar degrees. It is noted that both Tullamore and Portarlington are identified by the EPA (2019¹³) as Priority Areas with respect to the European Urban Wastewater Treatment Directive, that is waste water discharges from these plants are the sole significant pressure on water bodies at risk of pollution. However, the EPA also identify that Irish Water has improved waste water treatment at both Tullamore and Portarlington and that the EPA is monitoring surface waters in these areas to determine if the risk of pollution from waste water discharges has been satisfactorily resolved.

Population allocation alternatives are assessed against Strategic Environmental Objectives (see Section 3.11) on Table 4.1.

Table 4.1 Assessment¹⁴ of Population Allocation Alternatives against Strategic Environmental Objectives

Alternative Scenario	Likely to Improve status of SEOs		Potential Conflict with status of SEOs – likely to be mitigated	
	to a Greater degree	to a Lesser degree	to a Lesser degree	to a Greater degree
A. Provide additional extent of growth to Tullamore or Birr	PHH MA A C BFF S W CH L		PHH MA A C BFF S W CH L	
B. Provide additional extent of growth to Edenderry or Portarlington	BFF S W CH L	PHH MA A C	BFF S W CH L	PHH MA A C

4.4 Alternatives for Rural Areas

(i) Alternatives for Areas under Strong Urban Influence

Description

- A.** Include a “Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas¹⁵, & Areas of Special Control¹⁶” policy that considers a single dwelling for the permanent occupation of an applicant where a number of criteria can be demonstrated.
- B.** Do not include a “Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control” policy that provides for a presumption in favour of applications for single houses by applicants, subject to various criteria being met.

Evaluation

Alternative A

Restricting development in rural areas that are under strong urban influence would positively impact upon the protection and management of the environment and sustainable development. The restrictions would help to both reduce levels of greenfield development in

¹³ Urban Waste Water Treatment in 2018

¹⁴ The alternatives are evaluated using compatibility criteria in order to determine how they would be likely to affect the status of the existing environment and the SEOs. The SEOs and the alternatives are arrayed against each other to demonstrate which interactions would cause effects on specific components of the environment. Where the appraisal identifies an interaction with the status of an SEO the relevant SEO code is entered into the relevant column.

¹⁵ Areas under Strong Urban Influence & Stronger Rural Areas include:

- Electoral Divisions where at least 15% of their workforce commute to a town of population over 10,000 or a town with more than 2,500 jobs
- Additional Electoral Divisions with generally stable or rising population

¹⁶ Areas of Special Control include:

- National/International Conservation Designations (Special Protection Areas, Special Areas of Conservation, Natural Heritage Areas)
- Areas of High Amenity
- Source Protection Zones
- Restricted Regional Roads

areas immediately surrounding existing centres and encourage brownfield development within existing centres.

Rural development would be directed towards appropriate rural areas and urban development would be directed towards established settlements. This alternative would prevent low density urban sprawl and associated adverse effects upon sustainable mobility, climate emission reduction targets and various environmental components.

Alternative B

Not restricting development in rural areas that are under strong urban influence would adversely impact upon the protection and management of the environment and sustainable development. The absence of restrictions would result in increased levels of greenfield development in areas immediately surrounding existing centres and less demand for brownfield development within existing centres.

Urban generated development would occur within rural areas outside of established settlements. This alternative would result in low density urban sprawl and associated adverse effects upon sustainable mobility, climate emission reduction targets and various environmental components.

Alternatives for Rural Areas under Strong Urban Influence are assessed against Strategic Environmental Objectives (see Section 3.11) on Table 4.2.

Table 4.2 Assessment of Alternatives for Areas under Strong Urban Influence against Strategic Environmental Objectives

Alternative	Likely to Improve status of SEOs		Potential Conflict with status of SEOs – likely to be mitigated	
	to a Greater degree	to a Lesser degree	to a Lesser degree	to a Greater degree
A. Include a Policy for “Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control”	BFF PHH S W MA A C CH L		BFF PHH S W MA A C CH L	
B. Do not include a Policy for “Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control”		BFF PHH S W MA A C CH L		BFF PHH S W MA A C CH L

(ii) Alternatives for consideration of Sráids in Rural Areas

Description

- A.** Provide focus to and targeted policies/objectives for Sráids as part of Rural Tier of Settlement Hierarchy.
- B.** Sráids are included within the wider open countryside but there is no focus or no targeted provisions for these locations.

Evaluation

Alternative A

Providing focus to and targeted policies/objectives for Sráids as part of Rural Tier of Settlement Hierarchy would provide a viable alternative to one-off housing in the open countryside. Development within Sráids would be more likely to be served by infrastructure (including water services infrastructure) and more likely to protect the environment including the status of ground and surface waters, water used for drinking water, human health, biodiversity and flora and fauna and the landscape. Development would be required to be subject to siting, design, protection of residential amenities and normal development management criteria, subject to the satisfactory provision of infrastructure and services and in keeping with the character of the settlement.

Alternative B

Not providing a focus to and targeted policies/objectives for Sráids as part of Rural Tier of Settlement Hierarchy would be less likely to provide a viable alternative to one-off housing in the open countryside. Development within the open countryside would be less likely to be served by infrastructure (including water services infrastructure) and less likely to protect the environment including the status of ground and surface waters, water used for drinking water, human health, biodiversity and flora and fauna and the landscape.

Table 4.3 Assessment of Alternatives for consideration of Sráids in Rural Areas

Alternative	Likely to Improve status of SEOs		Potential Conflict with status of SEOs – likely to be mitigated	
	to a Greater degree	to a Lesser degree	to a Lesser degree	to a Greater degree
A. Provide focus to Sráids as part of Rural Tier of Settlement Hierarchy, supporting housing as a viable alternative to one-off housing in the open countryside	BFF PHH S W MA A C CH L		BFF PHH S W MA A C CH L	
B. Sráids are included within the wider open countryside but there are no targeted provisions for these locations		BFF PHH S W MA A C CH L		BFF PHH S W MA A C CH L

4.5 Alternatives for Land Use Zoning

Land use zoning has been applied in a way that primarily seeks to achieve sustainable and compact growth, taking into account the various requirements set out in the higher-level NPF and Eastern and Midlands RSES.

The Council have identified realistic alternatives for certain settlements, where these are available taking into account the various requirements set out in the higher-level NPF and Eastern and Midlands RSES. These realistic alternatives are described and assessed against Strategic Environmental Objectives (see Section 3.11) on Table 4.4.

Table 4.4 Assessment of Land Use Zoning Alternatives against Strategic Environmental Objectives

Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
Tullamore (Set 1)	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Tullamore (Set 2)	Green buffer along the bypass and canal and train lines: A. Provide	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	A green buffer along the bypass and train lines would help to protect future residential and employment populations from emissions to air including noise. Buffers along the canal would help to facilitate the protection of this amenity asset from visually intrusive developments. The green buffers would also contribute towards the protection of ecological connectivity, water management and protected structures and their context. The absence of a green buffer would make adverse impacts upon the aforementioned sensitivities more likely.
	Green buffer along the bypass and canal and train lines: B. Do not provide			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	
Birr (Set 1)	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
								components.
Birr (Set 2)	Green belt between Crinkill Village and Birr Town: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			A green belt between Crinkill would facilitate the protection of the character of Crinkill village mature trees (some of which are the subject of Tree Preservation Orders), non-designated biodiversity, an Esker between Crinkill and Birr Town which has been previously identified as an Area of High Amenity and the context of various structures of architectural value. The absence of a greenbelt would facilitate sprawl from the south of Birr town, and associated effects, and impacts upon the aforementioned sensitivities.
	Green belt between Crinkill Village and Birr Town: B. Do not provide			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L		
Banagher (Set 1)	New residential zoning: A. Less compact			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.	
	New residential zoning: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L		By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.	
Clara	New residential zoning: A. Less compact			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.	
	New residential zoning: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L		By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.	
Daingean	Industrial zoning: A. Less compact - omit land to the south			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.	
	Industrial zoning: B. More compact - include land to the south of the town	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L		By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental	

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
							effects that would otherwise occur - this would benefit the protection of multiple environmental components.	
Ferbane	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: A. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Kilcormac	Open Space, Amenity and Recreation zonings: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			The two areas of Open Space, Amenity and Recreation zonings would provide for needed sporting/athletic facilities, at both local and regional levels. Such facilities are necessary in making settlements more desirable places to live – so that they maintain populations and services. Attracting new populations into the County’s settlements will reduce demand for development in areas that are less well serviced and connected – that type of development would be unsustainable and would have higher environmental impacts. The development of sporting/athletic facilities would present potential local impacts; residual impacts would be mitigated by the measures integrated into the Plan.
	Open Space, Amenity and Recreation zonings: B. Do not provide			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	
Ballinagar	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Ballycumber (Set 1)	Open Space, Amenity and Recreation zoning along river and park/playground: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			The Open Space, Amenity and Recreation zoning would contribute towards the protection of architectural heritage at the Ballycumber House and the natural heritage of the River Brosna and its adjacent lands. Furthermore this zoning could help to facilitate recreational activities along the canal and adjacent to Ballycumber House. Allowing for such activities are necessary in making settlements more desirable places to live – so that they maintain populations and services. Attracting new populations into the County’s settlements will reduce demand for development in areas that are less well serviced and connected – that type of development would be unsustainable and would have higher environmental impacts. Facilitating recreational activities would present potential local impacts; residual impacts would be mitigated by the measures integrated into the Plan.
	Open Space, Amenity and Recreation zoning along river and park/playground: B. Do not provide							

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
Ballycumber (Set 2)	Opportunity vacant site in the south east of the town: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			Encouraging the re-development of the Opportunity Site, which is a visually prominent site at the entry into the village, would reduce the need to develop less well serviced, less well connected sites elsewhere. Re-development of this site would make the village a more desirable place to live. Attracting new populations into the County's settlements will reduce demand for development in areas that are less well serviced and connected – that type of development would be unsustainable and would have higher environmental impacts. Facilitating re-development of the site would present potential local impacts; residual impacts would be mitigated by the measures integrated into the Plan.
	Opportunity vacant site in the south east of the town: B. Do not provide			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	
Belmont	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Cloghan	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Clonbullogue	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
							components.	
Coolderry	Employment zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	Employment zoning: A. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Geashill	New residential zoning to be provided: A. Behind existing residential development on the west side of the village			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	The potential environmental effects that could arise as a result of developments at the alternative sites are similar. Access to the site behind the existing residential development is constrained due to distance from the road and adjacent development/ownership. As a result, it is less likely, all other factors being equal, that this land parcel would be developed for the residential development provided for, thereby making the proper planning and sustainable development of this settlement less likely under this alternative and potentially resulting in increased demand for housing in sites that are less well serviced and further away from the village.
	New residential zoning to be provided: B. To the north of the R420 Regional Road	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	The potential environmental effects that could arise as a result of developments at the alternative sites are similar. Access to the site to the north of the R420 is not significantly constrained. As a result, it is more likely, all other factors being equal, that this land parcel would be developed for the residential development provided for, thereby making the proper planning and sustainable development of this settlement more likely under this alternative, meeting demand for housing and reducing the need to develop sites that are less well serviced and further away from the village.
Killeigh	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Kinnitty (Set 1)	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Kinnitty (Set 2)	Open Space, Amenity and Recreation zoning at the Rectory: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			The Open Space, Amenity and Recreation zoning would contribute towards the protection of built and natural heritage at and surrounding the Rectory. Furthermore, this zoning would help to facilitate recreational activities around this site of architectural significance in Kinnitty. Allowing for such activities are necessary in making settlements more desirable places to live – so that they maintain populations and services. Attracting new populations into the County's settlements will reduce demand for development in areas that are less well serviced and connected – that type of development would be unsustainable and would have higher environmental impacts. Facilitating recreational activities would present potential local impacts; residual impacts would be mitigated by the measures integrated into the Plan.
	Open Space, Amenity and Recreation zoning at the Rectory: B. Do not provide			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L		
Moneygall	Enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	Enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Mucklagh	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Pollagh/Lemanaghan (Set 1)	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
							sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.	
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Pollagh/ Lemanaghan (Set 2)	Additional Open Space, Amenity and Recreation zoning in Lemanaghan: A. Provide	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			The Open Space, Amenity and Recreation zoning would provide for needed sporting facilities. Such facilities are necessary in making settlements more desirable places to live – so that they maintain populations and services. Attracting new populations into the County's settlements will reduce demand for development in areas that are less well serviced and connected – that type of development would be unsustainable and would have higher environmental impacts. The development of sporting facilities would present potential local impacts; residual impacts would be mitigated by the measures integrated into the Plan.
	Additional Open Space, Amenity and Recreation zoning in Lemanaghan: B. Do not provide			BFF PHH S MA A C CH L		BFF PHH S MA A C CH L		
Rhode	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Riverstown	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L			BFF PHH S MA A C CH L			By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.

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Town	Alternative (selected alternatives in bold)	Likely to Improve status of SEOs			Potential Conflict with status of SEOs – likely to be mitigated			Commentary
		to a Greater degree	to a Moderate degree	to a Lesser degree	to a Lesser degree	to a Moderate degree	to a Greater degree	
Shannonbridge	Enterprise and employment zonings: A. Less compact, further from village centre			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	Enterprise and employment zonings: B. More compact, closer to village centre	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Shinrone	New residential zoning: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential zoning: B. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.
Walsh Island	New residential and enterprise and employment zonings: A. Less compact			BFF PHH S MA A C CH L			BFF PHH S MA A C CH L	By not consolidating land use zoning and including unnecessary land use zoning, this alternative would provide for a less compact form of development that would fail to maximise benefits from infrastructural investment. By facilitating the unnecessary sprawl of the settlement and failing to consolidate zoning, this alternative would decrease the likelihood of brownfield development and conflict with efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Providing for unnecessary zoning would be likely to result in higher levels of sprawl and associated avoidable potential adverse environmental effects.
	New residential and enterprise and employment zonings: B. More compact	BFF PHH S MA A C CH L					BFF PHH S MA A C CH L	By consolidating land use zoning and reducing unnecessary land use zoning this alternative would provide for a more compact form of development that would help to maximise benefits from infrastructural investment. By consolidating the zoning and helping to avoid unnecessary sprawl of the settlement, this alternative would increase the likelihood of brownfield development and contribute towards efforts to improve sustainable mobility (with associated effects on energy, air, noise and human health). Reducing unnecessary zoning would help to minimise sprawl and would avoid potential adverse environmental effects that would otherwise occur - this would benefit the protection of multiple environmental components.

4.6 Selected Alternatives for the Plan

Selected alternatives for the Plan that emerged from the planning/SEA process are indicated on Table 4.5 below.

These alternatives have been selected and developed by the Planning Team and placed on public display by the Council having regard to both:

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

Table 4.5 Selected Alternatives for the Plan

Tier	Alternatives Considered	Selected Alternative
Tier 1: Alternatives for Positioning under the Settlement Hierarchy	Not available	n/a
Tier 2: Alternatives for Population Allocations	A. Provide additional extent of growth to Tullamore or Birr or B. Provide additional extent of growth to Edenderry or Portarlinton	A. Provide additional extent of growth to Tullamore or Birr
Tier 3: Alternatives for Rural Areas	(i) Alternatives for Alternatives for Areas under Strong Urban Influence A. Include a Policy for "Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control" or B. Do not include a Policy for "Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control"	A. Include a Policy for "Housing in Rural Areas under Strong Urban Influence and Stronger Rural Areas, & Areas of Special Control"
	(ii) Alternatives for consideration of Sráids in Rural Areas A. Provide focus to Sráids as part of Rural Tier of Settlement Hierarchy, supporting housing as a viable alternative to one-off housing in the open countryside or B. Sráids are included within the wider open countryside but there are no targeted provisions for these locations	A. Provide focus to Sráids as part of Rural Tier of Settlement Hierarchy, supporting housing as a viable alternative to one-off housing in the open countryside
Tier 4: Alternatives for Densities	Not available	n/a
Tier 5: Land Use Zoning	Tullamore (Set 1 of 2) New residential zoning: A. Less compact or B. More compact	B. More compact
	Tullamore (Set 2 of 2) Green buffer along the bypass and canal and train lines: A. Provide or B. Do not provide	A. Provide
	Birr, including Crinkill (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Birr, including Crinkill (Set 2 of 2) Green belt between Crinkill Village and Birr Town: A. Provide or B. Do not provide	A. Provide

Tier	Alternatives Considered	Selected Alternative
	Banagher (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Clara (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Daingean (Set 1 of 1) Industrial zoning: A. Less compact – include land to the south of the town or B. More compact - omit land to the south of the town	B. More compact - omit land to the south of the town
	Ferbane (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Kilcormac (Set 1 of 1) Open Space, Amenity and Recreation zonings: A. Provide or B. Do not provide	A. Provide
	Ballinagar (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Ballycumber (Set 1 of 2) Open Space, Amenity and Recreation zoning along river and park/playground: A. Provide or B. Do not provide	A. Provide
	Ballycumber (Set 2 of 2) Opportunity vacant site in the south east of the town: A. Provide or B. Do not provide	A. Provide
	Belmont (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Cloghan (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Clonbullogue (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Colderry (Set 1 of 1) Employment zoning: A. Less compact or B. More compact	B. More compact
	Geashill (Set 1 of 1) New residential zoning to be provided: A. Behind existing residential development on the west side of the village or B. To the north of the R420 Regional Road	B. To the north of the R420 Regional Road

Tier	Alternatives Considered	Selected Alternative
	Killeigh (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Kinnitty (Set 1 of 2) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Kinnitty (Set 2 of 2) Open Space, Amenity and Recreation zoning at the Rectory: A. Provide or B. Do not provide	A. Provide
	Moneygall (Set 1 of 1) Enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Mucklagh (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Pollagh/ Lemanaghan (Set 1 of 2) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Pollagh/ Lemanaghan (Set 2 of 2) Additional Open Space, Amenity and Recreation zoning in Lemanaghan: A. Provide or B. Do not provide	A. Provide
	Rhode (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact
	Riverstown (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Shannonbridge (Set 1 of 1) Enterprise and employment zonings: A. Less compact, further from village centre or B. More compact, closer to village centre	B. More compact, closer to village centre
	Shinrone (Set 1 of 1) New residential zoning: A. Less compact or B. More compact	B. More compact
	Walsh Island (Set 1 of 1) New residential and enterprise and employment zonings: A. Less compact or B. More compact	B. More compact

Section 5 Summary of Effects arising from Plan

Offaly County Council have integrated various recommendations arising from the SEA, AA and SFRA processes into the Plan (see Section 6). Table 5.1 provides a detailed overall evaluation of the environmental effects arising from the Plan. The effects encompass all in-combination/cumulative effects arising from implementation of the Plan. The potentially significant adverse environmental effects (if unmitigated) arising from implementation of the Plan are detailed as are residual effects, taking into account mitigation through both provisions integrated into the Plan.

The Plan, considered as a whole, contributes towards environmental protection and management and sustainable development and complies with various legislative requirements. This is identified throughout the SEA documentation.

Various Plan provisions that would contribute towards the sustainable development of the County would, at the same time, have the potential to conflict with the environment, were mitigation measures not taken into account. This is normal and mitigation measures have been integrated into the Plan to deal with these potential effects.

However, a small number of provisions have been adopted by the Elected Members as part of the Plan that are particularly internally inconsistent with the overall approach provided for by the Plan. These provisions relate are detailed below.

Rahan

As identified in the Chief Executive's Report with regard to Rahan's change in typology from a Sráid to a Village:

"For the purpose of the county development plan settlement hierarchy, the distinction made between Villages and Sráids is that Villages are serviced by mains wastewater treatment, whereas Sráids are not. Without mains wastewater treatment, a settlement is dependent on individual on-site effluent treatment systems and therefore cannot develop at a sustainable rate. Rahan has no mains wastewater treatment plant. College View housing estate is served by a shared septic tank system and the remainder of the properties in the Sráid have individual effluent treatment systems.

The policy approach for Sráids is the promotion of balanced sustainable development, in an incremental and consolidated manner with the emphasis on small scale development over a medium to long term period, in keeping with the character of the settlement. The Rahan Sráid Plan includes a variety of objectives to support local facilities and amenities, including the development of facilities to improve tourism potential (see also response to Submissions Ref. CDP/D/28).

It is recommended that Rahan is designated as a Sráid under the county settlement hierarchy, thus no change to the draft Plan."

Taking the above into account, there is potential for significant adverse environmental effects, including on water resources, ecology and human health, to occur as a result of lack of water services infrastructure – which could result in increased pressure for development in surrounding less well serviced and connected rural areas. These effects would be mitigated by measures providing for environmental protection and management that have been integrated into the Plan.

Various Land Use Zonings

Material Alterations (such as MA262, MA263, MA265, MA274, MA276, MA277, MA299, MA330, MA349, MA352, MA368, MA395, MA401, MA408 and MA409) that have been adopted as part of the Plan were advised against, with SEA documentation identifying at the time that:

"There is no planning justification for these Proposed Alterations, they would not align with objectives relating to sustainable development, relate to greenfield lands in many cases and would present additional, unnecessary and potentially significant adverse effects on various environmental components. Potentially significant adverse effects, alone and/or in-combination with other similar changes alterations to zoning, would be likely to include:

- Effects on ecology and ecological connectivity
- Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces
- Increased loadings on water bodies
- Conflict with efforts to maximise sustainable compact growth and sustainable mobility
- Occurrence of adverse visual impacts

Where such alterations are beyond the established settlement envelope, potentially significant adverse effects would be likely to include:

- Difficulty in providing adequate and appropriate waste water treatment as a result of zoning outside of established built development envelopes of settlements
- Adverse impacts upon the economic viability of providing for public assets and infrastructure
- Adverse impacts upon carbon emission reduction targets in line with local, national and European environmental objectives
- Conflicts between transport emissions, including those from cars, and air quality
- Conflicts between increased frequency of noise emissions and protection of sensitive receptors
- Potential effects on human health as a result of potential interactions with environmental vectors

MA330 could potentially impact upon the protection of a European site and has been subject to Stage 2 AA. The AA recommended that the following text is integrated into the Plan at further modification stage: "Any proposal for development at these lands must demonstrate that it will not affect the nearby Ferbane Bog SAC, including as a result of changes to drainage patterns".

BLO-07 "Any proposal for development at the lands to the north west of the town as shown in the Ferbane Town Objectives Map must demonstrate that it will not affect the nearby Ferbane Bog SAC, including as a result of changes to drainage patterns." was integrated into the Plan to mitigate the concerns relating to MA330.

Similarly, in advance of the Draft Plan being placed out on public display a number of Members' motions were included that were advised against and identified by the SEA documentation at the time as having potential for likely significant environmental effects. These included: Enterprise and Employment zoning, Moneygall (has no established planning justification, would facilitate the unnecessary sprawl of the settlement and would fail to consolidate zoning); New Residential Zoning, Rhode (not consistent with the Section 28 Ministerial Guidelines on Sustainable Residential Development in Urban Areas); and a Boundary change at Dunkerrin Sráid (no established planning justification and would provide for a less compact form of development, facilitating the unnecessary sprawl of the Sráid).

Architectural Heritage

Certain Material Alterations (MA422, MA423, MA424, MA425 and MA426) that were adopted as part of the Plan were advised against, with SEA documentation identifying at the time that these alterations:

"would reduce the protection of architectural heritage by removing a structure that merits inclusion on the Record of Protected Structures from this list."

Wind Energy

Certain Material Alterations (MA440 and MA444) that were adopted as part of the Plan were advised against, with SEA documentation identifying at the time that these alterations:

"...would not provide the most evidence-based framework for development and has the potential to:

- Undermine and negate practical measures to reduce greenhouse gas emissions climate change in compliance with high-level climate action policy; and
- Restrict the potential for wind energy development in the County, which is contrary to national energy policy that supports reductions in the reliance on fossil fuels and the development of renewable energy resources including wind energy infrastructure."

Table 5.1 Overall Findings – Environmental Effects arising from Plan Provisions

Environmental Component	Environmental Effects, in combination with the wider planning framework Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP 2018, the Eastern and Midland RSES, adjacent Development Plans and lower-tier land use plans.			SEO Codes
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> Contribution towards protection of ecology (including designated sites, ecological connectivity, habitats) by facilitating development of lands (including those within and adjacent to the County's settlements) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-served lands elsewhere in the County and beyond. Contribution towards the maintenance of existing green infrastructure and associated ecosystem services, listed species, ecological connectivity and non-designated habitats. Contribution towards protection and/or maintenance of biodiversity and flora and fauna by contributing towards the protection of natural capital including the environmental vectors of air, water and soil. Biodiversity and flora and fauna includes biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species (including birds and bats), listed/protected species, ecological connectivity and non-designated habitats (including terrestrial and aquatic habitats), and disturbance to biodiversity and flora and fauna – including terrestrial and aquatic biodiversity and flora and fauna. Sustains existing sustainable rural management practices – and the communities who support them – to ensure the continuation of long-established managed landscapes and the flora and fauna that they contain. 	<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; Habitat loss, fragmentation and deterioration, including patch size and edge effects; and Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species such as birds and bats. 	<ul style="list-style-type: none"> Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces. Losses or damage to ecology (these would be in compliance with relevant legislation). 	BFF

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Environmental Component	Environmental Effects, in combination with the wider planning framework			SEO Codes
	Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP 2018, the Eastern and Midland RSES, adjacent Development Plans and lower-tier land use plans.			
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Population and Human Health	<ul style="list-style-type: none"> • Promotion of economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management. • Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the County's settlements) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the County and beyond • Contribution towards the protection of human health by facilitating development of lands (including those within and adjacent to the County's settlements) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the County and beyond. • Contributes towards protection of human health as a result of contributing towards the protection of natural capital including environmental vectors, including air and water. 	<ul style="list-style-type: none"> • Potential adverse effects arising from flood events. • Potential interactions if effects arising from environmental vectors. 	<ul style="list-style-type: none"> • Potential interactions with residual effects on environmental vectors – please refer to residual adverse effects under "Soil", "Water" and "Air and Climatic Factors" below. 	PHH
Soil	<ul style="list-style-type: none"> • Contribution towards the protection of soils (including those used for agriculture) and designated sites of geological heritage by facilitating development of lands (including those within and adjacent to the County's settlements) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the County and beyond. • Contribution towards the protection of the environment from contamination the highest standards of remediation, and where appropriate to consultations with the EPA and other relevant bodies, will be required to resolve any instances of environmental pollution created by contaminated land. 	<ul style="list-style-type: none"> • Potential adverse effects on the hydrogeological and ecological function of the soil resource, including as a result of development on contaminated lands. • Potential for riverbank erosion. 	<ul style="list-style-type: none"> • Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces. 	S

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Environmental Component	Environmental Effects, in combination with the wider planning framework			SEO Codes
	Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP 2018, the Eastern and Midland RSES, adjacent Development Plans and lower-tier land use plans.			
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Water	<ul style="list-style-type: none"> Contribution towards the protection of water by facilitating development of lands (including those within and adjacent to the County's settlements) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the County and beyond. Contributions towards the protection of water resources including the status of surface and groundwaters and water-based designations. Contribution towards flood risk management and appropriate drainage. 	<ul style="list-style-type: none"> Potential adverse effects upon the status of water bodies and entries to the WFD Register of Protected Areas (ecological and human value), arising from changes in quality, flow and/or morphology. Increase in flood risk and associated effects associated with flood events. 	<ul style="list-style-type: none"> Any increased loadings as a result of development to comply with the River Basin Management Plan. Flood related risks remain due to uncertainty with regard to extreme weather events – however such risks will be mitigated by measures that have been integrated into the Plan. 	W
Material Assets	<ul style="list-style-type: none"> Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the County's settlements) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the County and beyond. Contribution towards compliance with national and regional water services and waste management policies. Contribution towards increase in renewable energy use by facilitating renewable energy and electricity transmission infrastructure developments. Contribution towards limits in increases in energy demand from the transport sector by facilitating sustainable compact growth. Contribution towards reductions in average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart buildings, cities and grids. 	<ul style="list-style-type: none"> Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts). Failure to adequately treat surface water run-off that is discharged to water bodies (water services infrastructure and capacity ensures the mitigation of potential conflicts). Failure to comply with drinking water regulations and serve new development with adequate drinking water (water services infrastructure and capacity ensures the mitigation of potential conflicts). Increases in waste levels. Potential impacts upon public assets and infrastructure. Interactions between agricultural waste and soil, water, biodiversity and human health – including as a result of emissions of ammonia from agricultural activities (e.g. manure handling, storage and spreading) and the production of secondary inorganic particulate matter. 	<ul style="list-style-type: none"> Exceedance of capacity in critical infrastructure risks remain, including due to uncertainty with regard to climate – however, such risks will be mitigated by: measures, including those requiring the timely provision of critical infrastructure, and compliance with the Water Framework Directive and associated River Basin Management Plan. Residual wastes to be disposed of in line with higher-level waste management policies. Any impacts upon public assets and infrastructure to comply with statutory planning/consent-granting framework. 	MA

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Environmental Component	Environmental Effects, in combination with the wider planning framework			SEO Codes
	Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP 2018, the Eastern and Midland RSES, adjacent Development Plans and lower-tier land use plans.			
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Air and Climatic Factors	<ul style="list-style-type: none"> • Contribution towards climate mitigation and adaptation by facilitating compact development of lands (including those within and adjacent to the County's settlements) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-served lands elsewhere in the County and beyond. • In combination with other plans, programmes etc., contribution towards the objectives of the wide policy framework relating to climate mitigation and adaptation, and associated contribution towards maintaining and improving air quality and managing noise levels, including through measures relating to: <ul style="list-style-type: none"> ○ Sustainable compact growth; ○ Sustainable mobility, including walking, cycling and public transport; ○ Drainage, flood risk management and resilience; ○ Sectors including agriculture, residential heating and infrastructure; ○ Sustainable infrastructure design solutions including energy efficient buildings; green infrastructure). 	<ul style="list-style-type: none"> • Potential conflict between development under the Plan and aiming to reduce carbon emissions in line with local, national and European environmental objectives. • Potential conflicts between transport emissions, including those from cars, and air quality. • Potential conflicts between increased frequency of noise emissions and protection of sensitive receptors. • Potential conflicts with climate adaptation measures including those relating to flood risk management. 	<ul style="list-style-type: none"> • An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable compact growth and sustainable mobility. • Interactions between noise emissions and sensitive receptors. Various provisions have been integrated into the Plan to ensure that noise levels at sensitive receptors will be minimised. 	AC
Cultural Heritage	<ul style="list-style-type: none"> • Contributes towards protection of cultural heritage elsewhere in the County by facilitating development within existing settlements. • Contributes towards protection of cultural heritage within existing settlements by facilitating brownfield development and regeneration. 	<ul style="list-style-type: none"> • Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities. 	<ul style="list-style-type: none"> • Potential effects on known architectural and archaeological heritage and unknown archaeology however, these will occur in compliance with legislation. 	CH
Landscape	<ul style="list-style-type: none"> • Contributes towards protection of wider landscape and landscape designations by facilitating development within existing settlements. 	<ul style="list-style-type: none"> • Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape. 	<ul style="list-style-type: none"> • Landscapes will change overtime as a result of natural changes in vegetation cover combined with new developments that will occur in compliance with the Plan's landscape protection measures. 	L

Section 6 Mitigation and Monitoring Measures

6.1 Mitigation

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

Mitigation was achieved through the:

- Strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development¹⁷;
- Considering alternatives for the Plan¹⁸;
- Integration of environmental considerations into zoning provisions of the Plan¹⁹; and
- Integration of individual SEA, AA and SFRA provisions into the text of the Plan.

6.2 Monitoring

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

¹⁷ Far in advance of both the submission of the pre-Draft Plan to the Elected Members for approval and the placing of the Draft Plan on public display, Offaly County Council undertook various works in order to inform the preparation of the Plan. The findings of this strategic work have been integrated into the Plan and will contribute towards both environmental protection and management and sustainable development within the County. Strategic work undertaken by the Council includes background work in relation to Plan Strategies and other provisions for a variety of sectors including:

- Strategic Environmental Assessment;
- Appropriate Assessment;
- Strategic Flood Risk Assessment;
- Record of Protected Structures;
- Core Strategy;
- Housing Strategy including a Housing Need Demand Assessment;
- Economic Development;
- Wind Energy Strategy;
- Climate Action; and
- Transport.

¹⁸ Although strategic alternatives in relation to the content of the Plan were significantly limited for the Plan (see Section 4), as part of the Plan preparation/SEA process, the Council considered a number of alternatives for the Plan. These alternatives were assessed by the SEA process and the findings of this assessment informed the selection of preferred alternatives, facilitating an informed choice with respect to the type of Plan that was prepared and placed on public display.

¹⁹ Environmental considerations were integrated into the Plan's zoning through an interdisciplinary approach. Zoning has been applied in a way that primarily seeks to achieve sustainable and compact growth, taking into account the various requirements set out in the higher-level NPF and Eastern and Midland RSES. The detailed Plan preparation process undertaken by the Planning Department combined with specialist input from the SFRA process facilitated zoning that avoids inappropriate development being permitted in areas of high flood risk. Various provisions have been inserted into the Plan which provide for flood risk management at project level. Also taken into account were environmental sensitivities relating to ecology, cultural heritage, landscape and water, as well as the overlay mapping of environmental sensitivities.

Table 6.1 Indicators, Targets, Sources and Remedial Action

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Biodiversity, Flora and Fauna	BFF	<ul style="list-style-type: none"> Condition of European sites Number of spatial plans that have included ecosystem services content, mapping and policy to protect ecosystem services when their relevant plans are either revised or drafted SEA and AA as relevant for new Council policies, plans, programmes etc. Status of water quality in the County's water bodies Compliance of planning permissions with Plan measures providing for the protection of Biodiversity and flora and fauna – see Chapter 4 "Biodiversity and Landscape" 	<ul style="list-style-type: none"> Require all local level land use plans to include ecosystem services and green/blue infrastructure provisions in their land use plans and as a minimum, to have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species Implement and review, as relevant, the Biodiversity Plan for Offaly as incorporated into the Offaly Heritage Plan 2017-21 For planning permission to be only granted when applications demonstrate that they comply with all Plan measures providing for the protection of biodiversity and flora and fauna – see Chapter 4 "Biodiversity and Landscape" 	<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 (every 6 years). Department of Culture, Heritage and the Gaeltacht National Monitoring Report for the Birds Directive under Article 12 (every 3 years) Internal monitoring of preparation of local land use plans Internal monitoring of likely significant environmental effects of grants of permission (grant by grant). Consultations with the NPWS 	<ul style="list-style-type: none"> Where condition of European sites is found to be deteriorating this will be investigated with the Regional Assembly and the DCHG (and the DHPLG for water) to establish if the pressures are related to Plan actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance. Where water bodies are failing to meet at least good status this will be investigated with the DHPLG Water Section, the Regional Assembly, the EPA Catchment Unit and, as relevant, Irish Water to establish if the pressures are related to Plan actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance.
Population and Human Health	PHH	<ul style="list-style-type: none"> Implementation of Plan measures relating to the promotion of economic growth as provided for by Chapter 5 "Economic Development Strategy" Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Plan Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures Number of spatial plans that include specific green infrastructure mapping 	<ul style="list-style-type: none"> For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to the promotion of economic growth as provided for by Chapter 5 "Economic Development Strategy" No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures. Implementation of Green Infrastructure 	<ul style="list-style-type: none"> Internal review of progress on implementing Plan objectives Consultations with the Health Service Executive and EPA CSO data Internal monitoring of preparation of local land use plans 	<ul style="list-style-type: none"> Where planning applications in key growth towns are rejected due to insufficient capacity in the waste water treatment plant or failure of the waste water treatment plant to meet Emission Limit Values, the Council will contribute towards a response with the Regional Assembly, EPA and Irish Water to achieve the necessary capacity. Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHPLG, DCCAE and NTA to develop a tailored response.
Soil (and Land)	S	<ul style="list-style-type: none"> Proportion of population growth occurring on infill and brownfield lands compared to greenfield Volume of contaminated material generated from brownfield and infill Number of AA determinations and environmental assessments undertaken to support applications for brownfield and infill development prior to planning permission 	<ul style="list-style-type: none"> Maintain built surface cover nationally to below the EU average of 4% as per the NPF. Achieve the 40% target for growth on infill as per the NPF. 	<ul style="list-style-type: none"> Environmental Protection Agency (EPA), Geoportal Internal monitoring of likely significant environmental effects of grants of permission (grant by grant) 	<ul style="list-style-type: none"> Where the proportion of growth on infill and brownfield sites is not keeping pace with the targets set in the NPF and the RSES, the Council will liaise with the Regional Assembly to establish reasons and coordinate actions to address constraints to doing so.
Water	W	<ul style="list-style-type: none"> Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD Number of incompatible developments permitted within flood risk areas 	<ul style="list-style-type: none"> Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' Implementation of the objectives of the second cycle of the River Basin Management Plan by 2021 (and subsequent iterations as relevant) Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk 	<ul style="list-style-type: none"> EPA Monitoring Programme for WFD compliance Internal monitoring of likely significant environmental effects of grants of permission (grant by grant) 	<ul style="list-style-type: none"> Where water bodies are failing to meet at least good status this will be investigated with the DHPLG Water Section, the EPA Catchment Unit, the Regional Assembly and, as relevant, Irish Water to establish if the pressures are related to Plan actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance. Where planning applications in key growth towns are rejected due to insufficient

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Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
					<p>capacity in the Waste water treatment Plant or failure of the plant to meet Emission Limit Values, the Eastern and Midland Regional Assembly will coordinate a response between the relevant local authority, EPA and Irish Water to achieve the necessary capacity.</p> <ul style="list-style-type: none"> The Council will engage, as relevant, with the Eastern and Midland Regional Assembly and the OPW with respect to planning applications for development in areas of elevated flood risk.
Material Assets	MA	<ul style="list-style-type: none"> Programmed delivery of Irish Water infrastructure for all key growth towns in line with Irish Water Investment Plan and prioritisation programme to ensure sustainable growth can be accommodated Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan Proportion of population within who report regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> To map brownfield and infill land parcels across the County. All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan Where septic tanks are proposed, for planning permission to be only granted when applications demonstrate that the outfall from the septic tank will not – in- combination with other septic tanks– contribute towards any surface or ground water body not meeting the objective of good status under the Water Framework Directive Increased budget spends on water and waste water infrastructure By 2020 all citizens will have access to speeds of 30Mbps, and that 50% of citizens will be subscribing to speeds of 100Mbps 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission (grant by grant) CSO data Consultations with Irish Water Department of Housing, Planning and Local Government in conjunction with Local Authorities Department of Communications, Climate Action and Environment Department of Public Expenditure and Reform 	<ul style="list-style-type: none"> Where planning applications in key growth towns are rejected due to insufficient capacity in the waste water treatment plant or failure of the waste water treatment plant to meet Emission Limit Values, the Council will coordinate a response between the Regional Assembly, EPA and Irish Water to achieve the necessary capacity. Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, DHPLG and NTA to develop a tailored response.
Air	A	<ul style="list-style-type: none"> Proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels of 74% NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	<ul style="list-style-type: none"> Decrease in proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels. Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter 	<ul style="list-style-type: none"> CSO data Data from the National Travel Survey EPA Air Quality Monitoring Consultations with Department of Transport Tourism and Sport, Transport Trends and Department of Communication Climate Action and Environment 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above CSO 2016 figures, Council will coordinate with the Regional Assembly, DHPLG, DCCAE and NTA to develop a tailored response. See also entry under Population and human health above
Climatic Factors	C	<ul style="list-style-type: none"> Implementation of Plan measures relating to climate reduction targets as provided for by Plan provisions including those provided for and referenced in Chapter 3 "Climate Action and Energy" Proportion of journeys made by private fossil fuel-based car compared to 2016 levels Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> For review of progress on implementing Plan objectives to demonstrate successful implementation of measures climate reduction targets as provided for by Plan provisions including those provided for and referenced in Chapter 3 "Climate Action and Energy" Increase in the proportion of people resident in the County reporting regular cycling / walking to school and work above 2016 CSO figures Decrease in the proportion of journeys made by residents of the County using private fossil fuel-based car compared to 2016 levels Contribute towards transition to a competitive, low-carbon, climate-resilient and 	<ul style="list-style-type: none"> EPA Annual National Greenhouse Gas Emissions Inventory reporting Climate Action Regional Office Consultations with Department of Communication Climate Action and Environment CSO data 	<ul style="list-style-type: none"> Where trends toward carbon reduction are not recorded, the Council will liaise with the Regional Assembly to establish reasons and develop solutions Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, DHPLG and NTA to develop a tailored response

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Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
			environmentally sustainable economy by 2050 <ul style="list-style-type: none"> • Contribute towards the target of the Renewable Energy Directive (2009/28/EC), for all Member States to reach a 10% share of renewable energy in transport by 2020 • 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 		
Cultural Heritage	CH	<ul style="list-style-type: none"> • Percentage of entries to the Record of Monuments and Places, and the context these entries within the surrounding landscape where relevant, protected from adverse effects resulting from development which is granted permission under the Plan • Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from significant adverse effects arising from new development granted permission under the Plan 	<ul style="list-style-type: none"> • Protect entries to the Record of Monuments and Places, and the context of these entries within the surrounding landscape where relevant, from adverse effects resulting from development which is granted permission under the Plan • Protect entries to the Record of Protected Structures and Architectural Conservation Areas and their context from significant adverse effects arising from new development granted permission under the Plan 	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission (grant by grant) • Consultation with Department of Culture, Heritage and the Gaeltacht 	<ul style="list-style-type: none"> • Where monitoring reveals visitor pressure is causing negative effects on key tourist features, the Council will work with Regional Assembly, Fáilte Ireland and other stakeholders to address the pressures through additional mitigation
Landscape	L	<ul style="list-style-type: none"> • Number of developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Plan 	<ul style="list-style-type: none"> • No developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Plan • To seek to align with the National Landscape Strategy 	<ul style="list-style-type: none"> • Internal monitoring of likely significant environmental effects of grants of permission (grant by grant) 	<ul style="list-style-type: none"> • Where monitoring reveals developments permitted which result in avoidable adverse visual impacts on the landscape, the Council will re-examine Plan provisions and the effectiveness of their implementation