SEA Environmental Report

Appendix II – Non-Technical Summary

FOR THE

Draft Abbeyfeale Local Area Plan 2023-2029

for: **Limerick City and County Council**

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County Limerick

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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report for the Draft Abbeyfeale Local Area Plan 2023-2029 (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

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

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

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

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

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

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

How does the SEA work?

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

The SEA was scoped in consultation with designated environmental authorities.

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

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

Difficulties Encountered during the SEA process

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

What happens at the end of the process?

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

Section 2 The Draft Plan

2.1 Introduction

Limerick City and County Council has prepared a new Draft Local Area Plan (LAP) for Abbeyfeale under the Planning and Development Act 2000 (as amended). The Plan sets out an overall strategy for the proper planning and sustainable development over the years 2023-2029.

LAPs are required to be consistent with the Policy and Objectives of the Development Plan and its Core Strategy, as well as the National Planning Framework and Regional Spatial Economic Strategies.

The LAP should be read in conjunction with the Limerick Development Plan 2022-2028, which sets out the overarching development strategy for the County. Where conflicting objectives arise between the Development Plan and the LAP, the objectives of the Development Plan shall take precedence.

2.2 Content of the Draft Plan

The LAP sets out an overall strategy for the proper planning and sustainable development of Abbeyfeale in the context of Project Ireland 2040, the National Planning Framework, the Regional Spatial and Economic Strategy for the Southern Region and the Limerick Development Plan. It is informed by Ministerial Guidelines issued pursuant to Section 28 of the Act together with EU requirements regarding SEA and AA.

The LAP consists of a written statement and maps indicating objectives for zoning of land, development of residential and economic development and community infrastructure, safeguarding built and natural heritage, and potential opportunities for open space and recreation, active travel and transport, while outlining measures for environmental protection and climate action. The Core Strategy as set out in the Limerick Development Plan 2022 – 2028 sets out the quantum of lands identified for growth in Abbeyfeale, this in turn informs the land use zoning map of this Plan. The written statement generally takes precedence over maps should any discrepancy arise.

2.3 Strategic Vision

The purpose of the Draft Abbeyfeale Local Area Plan is to set out the policies and objectives that will guide the sustainable future growth of the town to 2029 and beyond and to ensure alignment with the provisions of higher-level planning policy. The vision of the plan is to improve the local environment focusing on the sustainable growth of the built environment, employment generation, and the provision of community and social services together in a low carbon, compact, consolidated and connected manner.

The Strategic Vision for Abbeyfeale is to fulfil the role of a Level 3 settlement as identified in the Limerick Development Plan. This will include the provision for growth in population, through a mix of high-quality residential development (choice and tenure), education and employment opportunities, sustainable mobility opportunities, a strengthened retail/commercial core for the town centre, enhanced community infrastructure, improved active lifestyles and recreational choices, while sustaining Abbeyfeale's unique heritage assets. The future development of Abbeyfeale will provide for low carbon, sustainable and consolidated growth in a coherent spatial manner.

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

Far in advance of the placing of the Draft Plan on public display, Limerick City and County Council undertook various works in order to inform the preparation of the Plan. This included a detailed population analysis to allow for, inter alia, the identification of the projected requirements for population growth and housing unit development. The provision of 246 units was identified for the Plan, determined by taking the proposed population growth per annum (35.16 units per annum), as outlined in the Core Strategy of the Limerick Development Plan, and applying this figure for the seven-year period from 2022-2029.

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

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

2.5 Relationship with other relevant Plans and Programmes

It is acknowledged that many of the major issues affecting Abbeyfeale'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 may, in turn, guide lower level strategic actions. These documents include plans and programmes such as those referred to throughout this summary. These documents have been subject to their own environmental assessment processes, as relevant.

The National Planning Framework (NPF) sets out Ireland's planning policy direction up to 2040. The NPF is to be implemented through Regional Spatial and Economic Strategies (RSESs) and lower tier Development Plans and Local Area Plans. The RSES for the Southern Region sets out objectives for land use planning, tourism, infrastructure, sustainable development, environmental protection and environmental management that have been subject to environmental assessment and must be implemented through the Limerick Development Plan 2022-2028, which sets out the overarching development strategy for the County, and the Local Area Plan.

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

Section 3 The Environmental Baseline

3.1 Introduction

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

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

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

As a result, there would be both:

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

3.3 Biodiversity and Flora and Fauna

Key ecological sensitivities within and surrounding the Plan area include:

- The **Lower River Shannon Special Area of Conservation** (partially located within the Plan area), which encompasses:
  - Semi-natural habitats, such as wet grassland, wet woodland and marsh occurring by the rivers and improved grassland (the most common habitat type);
  - Molinia meadows, grassland type of particular conservation significance;
  - Wet meadows dominated by rushes and sedges, and supporting a diverse and species-rich vegetation, including such uncommon species as Blue-eyed Grass and Pale Sedge; and
  - Floating river vegetation characterised by species of water-crowfoot, pondweeds and moss.
- Other ecologically designated sites nearby, including **The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle Special Protection Area** (located less than 2 km to the north and less than 5 km to the south-west of the Plan area);
- Aquatic and riverine ecology associated with the **River Feale (including species of freshwater pearl mussel and salmon), Rivers Allaughan and Ooolagh and the Glórach Stream**, as well as associated tributaries and riparian buffer zones; and
- Various woodlands, trees, parks, gardens, hedgerows, pollinator sites and lands used for agriculture within and surrounding the Plan area and the **Limerick Greenway**, providing habitats for flora and fauna and facilitating linkages and corridors to the surrounding countryside.

Designated sites include Special Areas of Conservation[1] (SACs) and Special Protection Areas[2] (SPAs). These are mapped on Figure 3.1. There is one European site partially within the Plan area, the Lower River Shannon SAC, and two other European sites, Moanveanlagh Bog SAC and Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, within 15 km of the Plan boundary.

[1] 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.

[2] 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.

CORINE[3] land cover mapping is shown on Figure 3.2 and identifies the land cover of central parts of the Plan area as urban fabric. Surrounding areas are identified as either pastures or lands principally occupied by agriculture with significant 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.

3.4 Population and Human Health

Census 2016 recorded a population of 2,023 persons in Abbeyfeale, an increase of 16 persons from the 2011 Census figure.[4] The Core Strategy of the Limerick Development Plan 2022-2028 predicts a population growth of 566 persons by 2028 for the Plan area[5].

Abbeyfeale is identified as a Service Town in the Limerick Development Plan 2022-2028. Service Towns fulfil important regional employment functions within and surrounding their catchment areas.

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

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

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

[3] 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.
[4] www.cso.ie
[5] Limerick Development Plan 2022-2028

baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

Existing Problems

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

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

3.5 Soil

Main soil types[6] surrounding the built-up areas of Abbeyfeale are: poorly drained mineral soils with peaty top soil surface, including surface water gleys (wetland soils with slowly permeable horizons resulting in seasonal waterlogging), partially within and to the north, east and west of the Plan area; and alluvial soils (associated with alluvial clay, silt or sand river deposits of the Rivers Feale and Allaughan), to the north and west of the Plan area.

Peat soils are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues. Peat bogs occur to the north, south-east and south-west, beyond the Plan area.

The GSI have identified[7] the Plan area as having mainly low levels of landslide susceptibility with areas of moderately high landslide susceptibility along the River Feale and some of the lands to the south of the Plan area.

[6] All soil types belong to a Sub-Group and so in turn to one of the 11 soil Great Groups. Great Groups and Sub-Groups are a hierarchical arrangement of soils used for taxonomical classification (http://gis.teagasc.ie/soils/soilguide.php).
[7] https://www.gsi.ie/en-ie/programmes-and-projects/geohazards/projects/Pages/Landslide-Susceptibility-Mapping.aspx

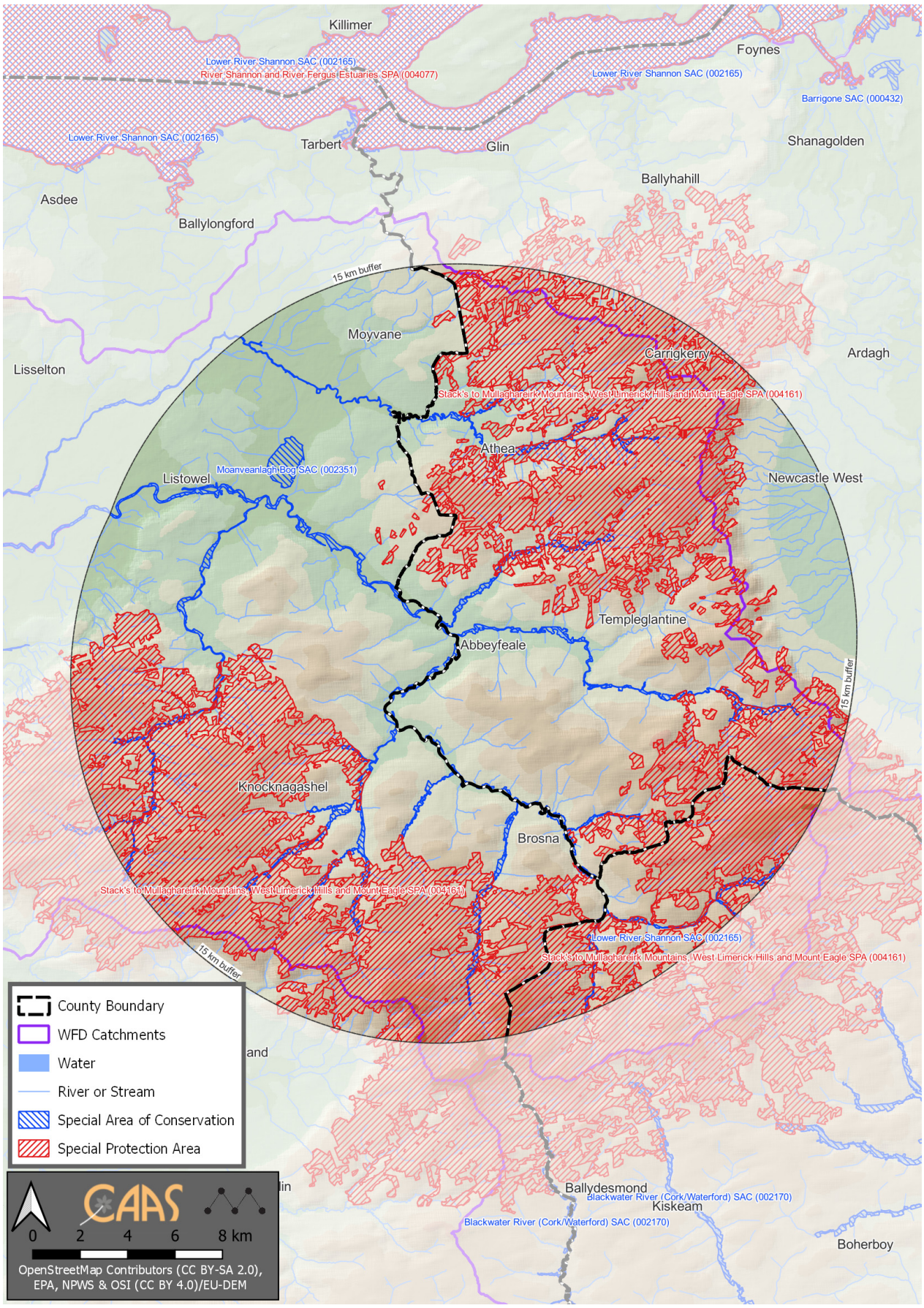

Figure 3.1 European Sites within and within 15 km buffer of Abbeyfeale Plan area

Figure 3.2 CORINE Land Cover Mapping 2018

3.6 Water

Surface and Ground Water Status

Surface water at and around the Plan area is channelled by rivers, streams and their tributaries. The River Feale flows to the west of Abbeyfeale, in a northern direction. Two large tributaries of the River Feale join the river in the vicinity of Abbeyfeale - the River Allaghaun at the northern edge of Abbeyfeale and the River Oolagh, close to the north-western parts of the Plan area.

The current WFD (2016-2021) status of various sections[8] of the River Feale (Feale_50 and Feale_60), the River Oolagh (Oolagh_20) and the River Allaghaun (Allaughaun_30 and Allaughan_40) within and surrounding the Plan area is *good.* These waterbodies are not identified as being at risk of meeting the WFD's objectives and no pressures are currently identified for these waterbodies (current EPA data from https://gis.epa.ie/EPAMaps/Water, April 2023).

The WFD status (2016-2021) of all groundwater underlying the Plan area is currently identified as being of *good status*, meeting the objectives of the Water Framework Directive.

The Water Framework Directive surface and ground water status (2016-2021) of rivers within and surrounding the Plan area is shown on Figure 3.3.

Aquifer Vulnerability and Productivity

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter into groundwater. The aquifers underlying the Plan area are as a mix of vulnerabilities:

- *High and Extreme vulnerability* and Extreme (*Rock at or near surface or karst),* within and adjacent to the southern parts of the Plan area and along the banks of the River Feale and River Allaughaun; and
- *Moderate and low vulnerability,* adjacent to and surrounding the central, north-western and southern parts of the Plan area.

Flooding

A Strategic Flood Risk Assessment (SFRA) document accompanies this SEA Environmental Report and the Draft Plan. Requirements in relation to SFRA are provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of Environment and Office of Public Works, 2009) and associated Department of the Environment, Community and Local Government Circular PL2/2014.

Flood risk management and drainage provisions are already in force through the Limerick Development Plan 2022-2028 and related provisions have been integrated into the LAP. In addition, land use zoning contained within the Draft Plan has been informed by the SFRA process and associated delineation of flood risk zones.

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

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

[8] As per EPA classification system (gis.epa.ie/EPAMaps)

Figure 3.3 Surface Water Status (2016-2021)

3.7 Air and Climatic Factors

Climate mitigation describes the action to reduce the likelihood of climate change occurring or reduce the impact if it does occur. This can include reducing the causes of climate change (e.g. emissions of greenhouse gases) as well as reducing future risks associated with climate change. Climate adaptation is a change in natural or human systems in response to the impacts of climate change. These changes moderate harm or exploit beneficial opportunities and can be in response to actual or expected impacts.

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

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, several Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for. The statutory Climate Change Adaptation Plan for the Transport Sector was prepared under the Climate Action and Low Carbon Development Act (2015) and the National Adaptation Framework (2018) and published by the Department of Transport in 2019. The Plan sets out the national strategy to reduce Ireland's vulnerability to the negative effects of climate change and to avail of any positive impacts, with an objective to help develop resilience within the sector in order to safeguard transport infrastructure from future climate impacts.

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

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

Under the National Climate Action Plan 2023, Limerick City and County Council is required to prepare a locally specific climate action plan for its administrative area. Once adopted, this plan will be valid for five years, and is subject to update at least every five years. The Limerick City and County Council Climate Action Plan will be developed over the coming year and will contribute towards addressing the mitigation of greenhouse gas emissions, climate change adaptation, and strengthening the alignment between national climate policy and the delivery of local climate action. The Limerick City and County Council Climate Action Plan must cover the following areas:

- An emphasis on a place-based approach to climate action, delivering a better understanding of greenhouse gas emissions and climate-related risks at a local level;
- Context-specific conditions and locally-tailored policy making;
- Evidence-based and integrated climate action through adaptation and mitigation measures, centred around an understanding of the role of the Council in climate action;
- Strategic direction at local and community levels on the delivery of the national climate objective.

The EPA's (2022) *Air Quality in Ireland 2021* identifies that:

- Air quality in Ireland is generally good, however, there are localised issues.
- Ireland met all of its EU legal requirements in 2021 but it failed to meet the new WHO-based guideline levels for Health in 2021.
- Air quality monitoring results in 2021 showed that fine particulate matter ($PM_{2.5}$) mainly from burning solid fuel, and nitrogen dioxide (NO_2) mainly from road transport, remain the main threats to good air quality.
- It is estimated that there are approximately 1,300 premature deaths annually in Ireland due to poor air quality from fine particulate matter (PM_5).

With regards to solutions, the report identifies that:

- Ireland and Europe should move towards achieving the health-based WHO air quality guidelines.
- The planned National Clean Air Strategy for Ireland needs to be published and fully implemented.
- Local Authorities must provide more resources to increase air enforcement activities.
- National investment in clean public transport is needed across the country.

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 by the Plan, if unmitigated, include; settlements; resources such as public open spaces, parks, recreational areas and greenways (e.g. the Limerick Greenway – a 40 km off-road walking and cycling route connecting the towns of Rathkeale, Newcastle West and Abbeyfeale and linking into County Kerry); public buildings and services; utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.); forestry; and natural resources that are covered under other topics such as water and soil.

Waste Water
Population growth targets for Abbeyfeale are already provided for under the Core Strategy of the Limerick Development Plan 2022-2028. The Local Area Plan is required to provide for the zoning of sufficient lands in order to meet this target. As detailed in Section 9.1 "Water and Wastewater Infrastructure" of the Local Area Plan: "In terms of wastewater, Uisce Eireann identifies that there is potential spare capacity of 370 population equivalent available to serve future development of the town, while also complying with discharge license requirements. Consequently, there is insufficient capacity available to cater for the projected population growth set out in Chapter 3 of the Draft Plan. An upgrade of the Abbeyfeale Waste Water Treatment Plant (WWTP) is not included in the 2022 – 2024 Uisce Eireann Investment Plant. The preparation of the subsequent investment plan will involve statutory consultation with planning authorities in 2023. In order to ensure the adequate protection and management of the environment, the requirements of this Local Area Plan, including those detailed under "Objective IU 02" below, must be demonstrated as being complied with in order for permission to be granted." Objective IU 02 Wastewater Infrastructure provides, inter alia: "b. Ensure adequate wastewater infrastructure is available to cater for existing and proposed development, in collaboration with Uisce Eireann, avoiding any deterioration in the quality of receiving waters and ensuring discharge meets the requirements of the Water Framework Directive. This includes the separation of foul and surface water through the provision of separate networks and nature-based rainwater management measures. Applications for development under the Plan must demonstrate that the proposal for development would not adversely affect a water body's ability to meet its objectives under the Water Framework Directive, individually as a result of the proposed development or cumulatively, in combination with other developments – evidence to this effect may include correspondence from Uisce Eireann."

Water Supply
Irish Water is responsible for providing and maintaining adequate public water supply infrastructure throughout County Limerick. Abbeyfeale is located within the Abbeyfeale Water Resource Zone (WRZ)[9]. The Regional Water Resource Plan for the South-West region is being finalised by Irish Water and will identify approaches to address the future water supply needs of Abbeyfeale in a sustainable manner. This involves ground water investigations to determine if the existing supply can be augmented and the long-term plan is to connect Abbeyfeale to the Listowel WRZ.[10]

Waste Management
Waste management within the Plan area is guided by the Southern Region Waste Management Plan 2015-2021. The Plan provides a framework for the prevention and management of waste in a sustainable manner in eight local authority areas, including Limerick City and County Council. There are three Region Waste Management Plans in Ireland and these will be replaced by a new National Waste Management Plan for a Circular Economy, which will take account of the various measures outlined in A Waste Action Plan for A Circular Economy - Ireland's National Waste Policy 2020-2025.

Transport
Abbeyfeale is strategically located at the border of Limerick and Kerry and is served by the N21, which transverses the town, and provides links to Newcastle West, Limerick, Tralee and Killarney. Abbeyfeale is readily accessible by a number of regional roads - northwards to Athea and Glin (R523), westwards to Duagh and Listowel (R555), and southwards to Mountcollins (R576). The Plan area is served by bus routes,

[9] A Water Resource Zone (WRZ) is an independent water supply system serving a region, city, town or village and is governed by topography or the extent of the water distribution network in an area. A WRZ may include multiple Water Treatment Plants and/or sources.
[10] Draft Abbeyfeale Local Area Plan 2023-2029

provided by Bus Éireann and Dublin Bus, with routes to Limerick, Tralee and Dublin. National, regional and local roads provide vital links between the towns and villages to retail, service and employment centres throughout the County and to adjoining counties.

Abbeyfeale is located along the Limerick Greenway, which links the West Limerick landscape with the settlements of Rathkeale, Newcastle West and Abbeyfeale.

Limerick City and County Council is working in partnership with Kerry County Council, Transport Infrastructure Ireland and the Department of Transport to develop the Abbeyfeale Road Scheme to relieve congestion on the N21 Limerick to Tralee Road through Abbeyfeale, improving the quality of life of commuters and local residents.

The Plan strives to reduce the reliance on the private car, by promoting and facilitating more sustainable modes of transport, based on the principles of the '10-minute town' concept, a compact settlement and the town centre first approach. Continued improvements to Limerick Greenway, including improved pedestrian and cyclist access between the Greenway and the town centre will support sustainable movement with settlements including Listowel and Newcastle West. A Traffic Management Scheme is being implemented for Abbeyfeale to improve the public realm of the town centre including better access to car parking, improved pedestrian links and the provision of dedicated bus parking.

Existing Problems
The provisions of the Plan will contribute towards protection of the environment with regard to impacts arising from material assets. The provisions of infrastructure and supporting services for development, particularly water and wastewater services, is critical.

3.9 Cultural Heritage

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

There are two Recorded Monuments within the Plan area: the church and graveyard in the town square on the site of the original Cistercian foundation; and a ringfort in the in the townland of Knockbrack to the north of the Plan area.

Architectural Heritage
There are 61 Protected Structures within the Plan area, including various examples of religious buildings, railway buildings, the buildings and terraces of the traditional vernacular streetscape and shopfronts and medieval structures. Abbeyfeale has a strong legacy of 18th, 19th and 20th century buildings. The main feature of the square in Abbeyfeale is the statue of Fr. William Casey. Other notable structures include the Cistercian Abbey Ruins and the Convent of Mercy.

An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or contributes to the appreciation of a Protected Structure. An ACA may or may not include Protected Structures. In an ACA, protection is placed on the external appearance of such areas or structures. There is one ACA designated within the Plan area, the Abbeyfeale ACA, which encompasses the area of the historic core, the Square, Main Street, Bridge Street and Church Street and includes 30 Protected Structures (out of which 12 are also National Inventory of Architectural Heritage structures).

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

3.10 Landscape

Abbeyfeale is situated on the River Feale in the foothills of the Mullaghareirk Mountains. The town has a rich cultural and historical heritage and a broad range of public amenity, sports and recreational facilities.

The Rivers Feale and Allaghaun and their associated floodplains are of central importance to the town and are recognised as an important recreational amenity and natural habitat. The landscape surrounding the built-up areas of the town is mainly agricultural and pastoral, with pocket areas of woodlands, including trees and groups of trees in the Town Park and adjacent adult education facility site at Mountmahon.

The existing Limerick Development Plan 2022-2028 identifies ten Landscape Character Areas and Views and Prospects within the Council's administrative area. Abbeyfeale is partially located within two Landscape Character Areas (LCAs): the 'Western Uplands' (LCA 10), an area characterised by an upland character with isolated farmsteads and improved grasslands with pockets of forestry; and 'Southern Uplands' (LCA 7), characterised by gently undulating range of hills, improved hill grassland and disturbed peatland habitats.

Kerry County Council's Landscape Review identifies the area of County Kerry to the west of Abbeyfeale to be part of the River Feale Valley Landscape Character Area, which is identified as being of Medium Sensitivity.

Existing Environmental Problems

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

3.11 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies that generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives that have been transposed into Irish law and which are required to be implemented. The SEOs are set out under a range of topics (see Table 3.1) and are used as standards against which the provisions of the Plan and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if – in the case of adverse effects – unmitigated.

Table 3.1 Strategic Environmental Objectives

Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
Biodiversity, Flora and Fauna	**BFF**	No net contribution to biodiversity losses or deterioration	• Protect, conserve and enhance habitats, species and areas of regional and local importance, including aquatic habitats and species and promote the sustainable management of ecological networks. • Ensure the continued conservation of the Natura 2000 sites, Natural Heritage and Proposed Natural Heritage sites. These sites are important, both as an amenity and natural history resource. • 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	• Facilitate a good standard of quality of life for the population through ensuring high quality residential, recreational and working environments • Provide policy support for the provision of suitable infrastructure and facilities for the local population • 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	• Place an emphasis on the development of brownfield sites rather than greenfield sites. By reducing the possible development of greenfield sites this makes a positive contribution to soil conservation • This can also be achieved through the sensitive reuse of existing buildings, reducing the need for new build • Protect geological sites within the plan area • 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

Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
Water	W	Protection, improvement and sustainable management of the water resource	• Ensure that wastewater infrastructure keeps pace with development proposals • Ensure that the requirements of the Water Framework Directive are incorporated into the Plan • Ensure that wetland and peatland sites are preserved • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and County growth targets in the context of existing and projected water supply and wastewater capacity constraints ensuring the protection of receiving environments • Avoid inappropriate zoning and development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • 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	• Maintain sustainable access to assets such as open spaces, water resources and all other physical and social infrastructure • Ensure that there is adequate policy support for infrastructural provision in the plan area • Optimise existing infrastructure and provide new infrastructure to match population distribution proposals in the County - this includes transport infrastructure • Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, solar, hydro, biomass, energy from waste and traditional fossil fuels • Promote the circular economy, reduce waste, and increase energy efficiencies • Ensure there is adequate sewerage and drainage infrastructure in place to support new development • Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes • Encourage the transition to a zero-carbon economy by facilitating the development of a grid infrastructure to support renewables and international connectivity. Reduce the average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart- buildings, cities and grids
Air	A	Support clean air policies that reduce the impact of air pollution on the environment and public health	• To avoid deterioration of air quality in the plan area • 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 Factors	C	Achieving transition to a competitive, low carbon, climate-resilient economy that is cognisant of environmental impacts	• To increase energy efficiency and the proportion of energy generated from renewable sources and where necessary to ensure the sensitive application of energy saving measures to the historic built fabric • To include climate action concerns into the plan policies • To minimise emissions of greenhouse gasses • 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	• Protect and conserve features of archaeological heritage and their setting • Protect conserve and promote the sustainable reuse of architectural heritage • Conserve and record those aspects of cultural heritage that may be affected by planning related activities
Landscape	L	Protect and enhance the landscape character	• Protect and conserve the quality, character and distinctiveness of the Limerick landscape both urban and rural • Retain the protected views in the Development Plan • To implement the framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention

Section 4 Alternatives

4.1 Introduction

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

4.2 Limitations in Available Alternatives

The Plan is required to be prepared by the existing, already in force, Limerick Development Plan 2022-2028 and the Planning and Development Act 2000 (as amended), which specifies various types of objectives that must be provided for by the Plan.

The alternatives available for the Plan are guided by the provisions of higher-level planning objectives, including those of the National Planning Framework, the Regional Spatial and Economic Strategy for the Southern Region and the Development Plan. 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 settlements.

4.3 Land Use Zoning Alternatives

Limerick City and County Council in preparing a Draft Plan for public display developed the following alternatives for land use zoning in Abbeyfeale (there are various alternative components under each heading):

Land Use Zoning Alternative 1 "More Consolidated, More Compact"

Population growth targets for Abbeyfeale are already provided for under the Core Strategy of the Limerick Development Plan 2022-2028. The Local Area Plan is required to provide for the zoning of sufficient lands in order to meet this target. Land Use Zoning Alternative 1 "More Consolidated, More Compact" would zone sufficient lands to allow Abbeyfeale to reach population allocation, resulting in balanced orderly development and implementation of the core strategy as contained in Chapter 2 of the Limerick Development Plan 2022-2028.

The more compact, serviced/serviceable land and infrastructure assessment approach under this alternative would allow for water supply, waste water, compact growth, public transport and co-ordinated development considerations to be integrated into the Plan to the highest degree. Gaps in infrastructure are identified and new development must ensure appropriate protection of the environment.

Less new infrastructure would be required than would be the case for Alternative 2 "Less Consolidated, Less Compact" – reducing the occurrence of potential direct impacts from new infrastructure and potential shortfalls.

The development of the Town Centre would be more compact and more sustainable under this scenario and would support the longer-term viability of the settlement. 30% of Residential units would be expected on Town Centre lands. The quantum of New Residential lands would be significantly lower than would be the case under Land Use Zoning Alternative 2 "Less Consolidated, Less Compact". Furthermore, Enterprise and Employment zoned lands would be more compact and would be closer to existing infrastructure. The approach would avoid unnecessary greenfield development (and associated effects on components including soil,

ecology, water and the landscape) in more peripheral locations and help to maximise opportunities for sustainable mobility (reducing emissions to air).

Opportunity sites would be identified with clear guidance on design and proposed uses identified – making successful applications for the sustainable, compact development of the town more likely.

The approach under Land Use Zoning Alternative 1 "More Consolidated, More Compact" would benefit the protection and management of various environmental components. Although potentially adverse effects associated with land use development would exist, they would be mitigated to a significant degree.

Land Use Zoning Alternative 2 "Less Consolidated, Less Compact"

Population growth targets for Abbeyfeale are already provided for under the Core Strategy of the Limerick Development Plan 2022-2028. The Local Area Plan is required to provide for the zoning of sufficient lands in order to meet this target. Land Use Zoning Alternative 2 "Less Consolidated, Less Compact" would zone excess lands, allowing Abbeyfeale to reach the population target; however, the over provision of zoned lands would be likely to result in less balanced and less orderly development.

By not following a more compact, serviced/serviceable land and infrastructure assessment approach, this alternative would not allow for water supply, waste water, compact growth, public transport and co-ordinated development considerations to be integrated into the Plan to the highest degree. More new infrastructure would be required than would be the case for Alternative 1 "More Consolidated, More Compact" – increasing the occurrence of potential direct impacts from new infrastructure and potential shortfalls.

The development of the Town Centre would be less compact and less sustainable under this scenario and would not optimally support the longer-term viability of the settlement to the same degree as would be the case with Land Use Zoning Alternative 1. 30% of Residential units would be less likely to be achieved on Town Centre lands. The quantum of New Residential lands would be significantly higher than would be the case under Land Use Zoning Alternative 1. The additional New Residential lands would be on more peripheral, less well serviced lands. Furthermore, Enterprise and Employment zoned lands would be less compact, including additional lands to the north of Coláiste Íde agus Iosef and the town's large supermarket. The approach would provide for unnecessary greenfield development (and associated effects on components including soil, ecology, water and the landscape) in more peripheral locations and help to maximise opportunities for sustainable mobility (reducing emissions to air).

The approach under Land Use Zoning Alternative 2 "Less Consolidated, Less Compact" would miss an opportunity to mitigate potentially adverse effects on various environmental components arising from land use development in Abbeyfeale.

The Selected Land Use Zoning Alternative for the Draft Plan is Land Use Zoning Alternative 1 "More Consolidated, More Compact".

4.4 Transport Infrastructure Alternatives

Limerick City and County Council in preparing a Draft Plan for public display developed the following alternatives for focusing on mitigation with respect to new transport infrastructure in Abbeyfeale:

Transport Infrastructure Alternative 1 "Focus on Mitigation at Plan and Project level"

Alternative 1 would require transport infrastructure projects that are not already permitted or provided for by existing plans/ programmes to be subject to feasibility assessment and, where feasibility is established, a Corridor and Route Selection Process. Under Alternative 1 new transport infrastructure would be considered subject to environmental constraints, including those related to habitats and potential impacts (e.g. disturbance from lighting). This would include minimising river crossings, avoiding sensitive habitats, not increasing barriers to flood waters and sustainable design and construction techniques. By focusing on mitigation at both plan and project levels, Alternative 1 would offer the most certainty for environmental protection and management and would be more likely to result in important individual projects (relating to sustainable mobility and emissions/energy objectives) receiving permission.

Transport Infrastructure Alternative 2 "Focus on Mitigation at Project level only"

The provision of new transport infrastructure, with all additional environmental mitigation left to be defined in the future, at project level (Alternative 2) would offer the least certainty for environmental protection and management and would be more likely to result in important individual projects (relating to sustainable mobility and emissions objectives) not been given permission.

The Selected Transport Infrastructure Alternative for the Draft Plan is Transport Infrastructure Alternative 1 "Focus on Mitigation at Plan and Project level".

Section 5 Summary of Effects arising from Plan

Table 5.1 summarises the overall environmental effects arising from Draft Plan provisions. The effects encompass all in-combination/cumulative effects arising from implementation of the Plan. The potentially significant adverse environmental effects (if unmitigated) arising from implementation of the Plan are detailed as are residual effects, taking into account mitigation integrated into both the Draft Plan and the Limerick Development Plan 2022-2028 – see Section 6.

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

Appropriate Assessment (AA) Screening and Stage 2 AA are being undertaken alongside the preparation of the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). As part of the AA Screening process, the Council determined that it could not be excluded, on the basis of objective information, that the emerging Draft Plan, individually, or in combination with other plans and projects would have a likely adverse effect on the integrity of a European Site. Therefore, Stage 2 AA is required. The emerging conclusion of the Stage 2 AA is that, following the application of mitigation, the Plan will not affect the integrity of the European Sites, alone or in combination with other plans or projects.[11]

A Strategic Flood Risk Assessment (SFRA) document accompanies this SEA Environmental Report and the Draft Plan. Requirements in relation to SFRA are provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of Environment and Office of Public Works, 2009) and associated Department of the Environment, Community and Local Government Circular PL2/2014. Flood risk management and drainage provisions are already in force through the Limerick Development Plan 2022-2028 and related provisions have been integrated into the LAP. In addition, land use zoning contained within the Draft Plan has been informed by the SFRA process and associated delineation of flood risk zones.

[11] Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be:
(a) no alternative solution available,
(b) imperative reasons of overriding public interest for the plan to proceed; and
(c) adequate compensatory measures in place.

Table 5.1 Overall Findings – Environmental Effects arising from Draft 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, the Southern RSES, the Limerick Development Plan 2022-2028 and adjacent Development Plans and lower-tier land use plans.			SEO Codes
	Significant Positive Effect, likely to occur	**Potentially Significant Adverse Environmental Effects, if unmitigated**	**Likely Residual Adverse Non-Significant Effects**	
Biodiversity and Flora and Fauna	• Contribution towards protection of ecology (including designated sites, ecological connectivity, habitats) by facilitating development of lands (including those within and adjacent to the Plan area) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contribution towards the 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.	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 (e.g. swifts and owls) and bats.	• 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**

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 Southern 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**	
Population and Human Health	• 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 Plan area) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the Plan area and beyond • Contribution towards the protection of human health by facilitating development of lands (including those within and adjacent to the Plan area) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contributes towards protection of human health as a result of contributing towards the protection of natural capital including environmental vectors, including air and water.	• Potential adverse effects arising from flood events. • Potential interactions if effects arising from environmental vectors.	• 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	• 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 Plan area) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contribution towards the protection of the environment from contamination the highest standards of remediation, 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.	• 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.	• Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces. • Riverbank erosion will continue to occur naturally over time and is likely to be enhanced by climate change.	**S**

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 Southern 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**	
Water	• Contribution towards the protection of water by facilitating development of lands (including those within and adjacent to the Plan area) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-serviced lands elsewhere in the Plan area and beyond. • Contributions towards the protection of water resources including the status of surface and groundwaters and water-based designations. • Contribution towards flood risk management and appropriate drainage.	• 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.	• 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	• 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 Plan area) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the Plan area and beyond. • Contribution towards compliance with national and regional water services and waste management policies. • Contribution towards increase in renewable energy use by facilitating renewable energy and electricity transmission infrastructure developments. • Contribution towards limits in increases in energy demand from the transport sector by facilitating sustainable compact growth. • Contribution towards reductions in average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart buildings and grids.	• 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.	• 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**

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 Southern 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**	
Air and Climatic Factors	• Contribution towards climate mitigation and adaptation by facilitating compact development of lands (including those within and adjacent to the Plan area) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-serviced lands elsewhere in the Plan area and beyond. • 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: o Sustainable compact growth; o Sustainable mobility, including walking, cycling and public transport; o Drainage, flood risk management and resilience; o Sectors including agriculture, residential heating and infrastructure; o Sustainable design, energy efficiency and green infrastructure.	• 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.	• 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	• Contributes towards protection of cultural heritage elsewhere by facilitating development within the Plan area. • Contributes towards protection of cultural heritage within the Plan area by facilitating brownfield development and regeneration.	• Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.	• Potential effects on known architectural and archaeological heritage and unknown archaeology however, these will occur in compliance with legislation.	**CH**
Landscape	• Contributes towards protection of wider landscape and landscape designations by facilitating development within the Plan area.	• Occurrence of adverse visual impacts and conflicts with the appropriate protection of designations relating to the landscape.	• 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, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (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:

- Strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development[12];
- Considering alternatives for the Plan[13];
- The integration of environmental considerations into zoning provisions of the Plan[14];
- The integration of individual SEA, AA and SFRA provisions into the text of the Plan; and
- The integration of individual provisions into the text of the County Development 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.

Given the position of the Local Area Plan in the land use planning hierarchy beneath the Limerick Development Plan and the Regional Spatial and Economic Strategy for the Southern Region, the measures identified in SEAs for these Plans have been integrated into those for this SEA. This consistency across the hierarchy of land use plans will improve the efficiency and effectiveness of future monitoring.

Monitoring indicators, targets, sources and remedial action is provided at Table 6.1. These measures can be considered and used as appropriate when it comes to monitoring the likely significant effects of implementing the Plan. The indicators may be updated over time, as new requirements and information emerge, for example. Reporting may be undertaken in conjunction with the monitoring reporting on other plans, such as the Development Plan and other Local Area Plans.

[12] Far in advance of the placing of the Draft Plan on public display, Limerick City and County Council undertook various works in order to inform the preparation of the Plan. This included a detailed population analysis to allow for, inter alia, the identification of the projected requirements for population growth and housing unit development. The provision of 246 units was identified for the Plan, determined by taking the proposed population growth per annum (35.16 units per annum), as outlined in the Core Strategy of the Limerick Development Plan, and applying this figure for the seven-year period from 2022-2029.

The findings of this strategic work have been integrated into the Plan and will contribute towards both environmental protection and management and sustainable development. The undertaking of this SEA process was part of this strategic work and contributed towards the integration of environmental considerations into individual Plan provisions.

[13] Although strategic alternatives in relation to the content of the Plan were guided by higher level planning objectives (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.

[14] Environmental considerations, including those relating to ecology, cultural heritage, landscape and water, were integrated into the Local Area Plan's zoning through an interdisciplinary approach which was informed by the environmental considerations identified by the SEA, AA and SFRA processes. Zoning has been applied in a way that primarily seeks to achieve sustainable and compact growth, taking into account the various requirements set out in the higher-level NPF, Southern RSES and Limerick Development Plan 2022-2028. Flood risk management and drainage provisions are already in force through the Development Plan and related provisions have been integrated into the LAP. In addition, land use zoning contained within the Draft Plan has been informed by the SFRA process and associated delineation of flood risk zones. The detailed Plan preparation process undertaken by the Planning Department combined with specialist input from the SFRA process facilitated zoning that helps to avoid inappropriate development being permitted in areas of high flood risk.

Table 6.1 Indicators, Targets, Sources and Remedial Action

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Biodiversity, Flora and Fauna	**BFF**	• Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	• Maintenance of favourable conservation status for all habitats and species protected under national and international legislation • Identification of sites of local biodiversity and ecological corridors • 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, Limerick Heritage Plan 2017-2030	• DHLGH report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years)[15] • DHLGH National Birds Directive Monitoring Report for the under Article 12 (every 3 years) [16] • Consultations with the NPWS [17]	• Where condition of European sites is found to be deteriorating this will be investigated with the Regional Assembly and the DHLGH to establish if the pressures are related to Plan actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance. • Loss of favourable conservation status of protected habitats and species. Altered zoning objectives in place for the Natura 2000 sites has taken place in the Plan • Enforcement action may also be required
		• Retention of sufficient areas zoned for open space • 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	• 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, Limerick Heritage Plan 2017-2030	• Internal review of local land use plans	• Review internal systems
		• SEAs and AAs as relevant for new Council policies, plans, programmes etc.	• Screen for and undertake SEA and AA as relevant for new Council policies, plans, programmes etc.	• Internal monitoring of preparation of local land use plans	• Review internal systems
		• Status of water quality in the County's water bodies	• Included under Water below	• Included under Water below	• Included under Water below
		• Compliance of planning permissions with Plan measures providing for the protection of Biodiversity and flora and fauna – see Development Plan Chapter 6 "Environment, Heritage, Landscape and Green Infrastructure"	• 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 Development Plan Chapter 6 "Environment, Heritage, Landscape and Green Infrastructure"	• Internal monitoring of likely significant environmental effects of grants of permission	• Review internal systems

[15] Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on Natura 2000 sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

[16] Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on Natura 2000 sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

[17] Including confirmation with development management that the following impacts have been considered and including use of monitoring data, where available: biodiversity/habitat loss; nitrogen deposition impacts on Natura 2000 sites; recreational disturbance resulting from implementation of tourism and recreation policies and objectives particularly in riparian areas; biodiversity enhancement; and disturbance /visitor pressure impacts of recreation, amenity and tourism development.

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Population and Human Health	PHH	• Implementation of Plan measures relating to the promotion of economic growth as provided for by Development Plan Chapter 5 "A Strong Economy"	• 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 Development Plan Chapter 5 "A Strong Economy" • Increase in employment opportunities, services and public services in the Plan area	• Internal review of progress on implementing Plan objectives • Consultations with DECC	• Consultation with Department of Education and interested parties in order to progress suitable development opportunities for the area • Review internal systems • Consultations with DECC
		• Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Plan	• No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	• Consultations with the Health Service Executive and EPA	• Consultations with the Health Service Executive and EPA
		• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• CSO data • Monitoring of Limerick City and County Council's Climate Change Adaptation Strategy 2019-2024	• Where proportion of population shows increase in private car use above previous CSO figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
		• Number of spatial plans that include specific green infrastructure mapping	• Require all local level land use plans to include specific green infrastructure mapping	• Internal review of local land use plans	• Review internal systems
Soil (and Land)	S	• Proportion of population growth occurring on infill and brownfield lands compared to greenfield (also relevant to Material Assets)	• Concentrate development in the selected zoned areas and encourage re-use of existing sites • Maintain built surface cover nationally to below the EU average of 4% as per the NPF • In accordance with National Policy Objectives 3c of the National Planning Framework, a minimum of 30% of the housing growth targeted in any settlement is to be delivered within the existing built-up footprint of the settlement • To map brownfield and infill land parcels across the County	• EPA Geoportal • Compilation of greenfield and brownfield development for the DHLGH • AA/Screening for AA for each application	• Enforcement, where necessary • 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.
		• Instances where contaminated material generated from brownfield and infill must be disposed of	• Dispose of contaminated material in compliance with EPA guidance and waste management requirements	• Internal review of grants of permission where contaminated material must be disposed of	• Consultations with the EPA and Development Management
		• Environmental assessments and AAs as relevant for applications for brownfield and infill development prior to planning permission	• Screen for and undertake environmental assessments and AA as relevant for applications for brownfield and infill development prior to planning permission	• Internal monitoring of grants of permission	• Review internal systems

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Water	W	• Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD • Water quality monitoring results by the EPA and by LCCC • EPA data under Urban Waste Water Discharges in Ireland Population Equivalents Greater than 500 persons - Reports • Performance of WWTP in relation to conditions of discharge licence	• Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' • Implementation of the objectives of the River Basin Management Plan • Protect and restore areas identified in the River Basin District Management Plan required to achieve "good" status, i.e. 4+ for water quality in line with the Water Framework Directive objectives • No deterioration in levels of compliance with drinking water quality standards and maintenance of national average compliance rate	• EPA Monitoring Programme for WFD compliance[18]	• Upgrade of WWTPs • Ongoing monitoring of discharge licences by staff from the Environment sections • Where water bodies are failing to meet at least good status this will be investigated with the DHLGH Water Section, the EPA Catchment Unit, the Regional Assembly and, as relevant, 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 are rejected due to insufficient capacity in the WWTP or failure of the WWTP to meet Emission Limit Values, the Council will consider whether it is necessary to coordinate a response with the Regional Assembly, EPA and Irish Water to achieve the necessary capacity.
		• Number of incompatible developments permitted within flood risk areas	• Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk	• Internal monitoring of likely significant environmental effects of grants of permission	• Where planning applications are being permitted on flood zones, the Council will ensure that such grants are in compliance with the Flood Risk Management Guidelines and include appropriate flood risk mitigation and management measures.
Material Assets	MA	• 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	• All new developments granted permission to be connected to and adequately and appropriately served by waste water treatment over the lifetime of the Plan • Where septic tanks are proposed, for planning permission to be only granted when applications demonstrate that the outfall from the septic tank will not – in-combination with other septic tanks– contribute towards any surface or ground water body not meeting the objective of good status under the Water Framework Directive • Facilitate, as appropriate, Irish Water in developing water and wastewater infrastructure • See also targets relating to greenfield and brownfield development of land under Soil and broadband under Population and Human Health	• Internal monitoring of likely significant environmental effects of grants of permission Consultations with the Irish Water • DHLGH in conjunction with Local Authorities	• Where planning applications are rejected due to insufficient capacity in the WWTP or failure of the WWTP to meet Emission Limit Values, the Council will consider whether it is necessary to coordinate a response with the Regional Assembly, EPA and Irish Water to achieve the necessary capacity.
		• Access to public amenities and facilities • Proportion of people reporting regular cycling / walking to school and work above previous CSO	• Increase in area of amenity space within the Plan area • Increased usage of open space and rivers as a public amenity • Increased visitor number to cultural	• CSO data • Monitoring of Limerick City and County Council's Climate Change Adaptation Strategy 2019-2024	• Enforcement where necessary • Ensure that sufficient open space allocation included in Plans • Where proportion of population shows increase in private car use above previous CSO figures, the

[18] Including monitoring of water quality and nitrogen deposition due to bioenergy and agricultural projects where available.

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
		figures	heritage sites • Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures		Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
Air	A	• Proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring	• Decrease in proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter	• CSO data • Data from the National Travel Survey • EPA Air Quality Monitoring • Consultations with Department of Transport and Department of Environment, Climate and Communications	• Where proportion of population shows increase in private car use above previous CSO figures, Council will coordinate with the Regional Assembly, DHLGH, DECC and NTA to develop a tailored response. See also entry under Population and human health above
Climatic Factors[19]	C	• Implementation of Plan measures relating to climate reduction targets	• For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to climate reduction targets	• Internal monitoring of likely significant environmental effects of grants of permission	• Establishment of dedicated section to consider climate change • Review internal systems
		• A competitive, low-carbon, climate-resilient and environmentally sustainable economy	• Contribute towards transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050	• Monitoring of Limerick City and County Council's Climate Change Adaptation Strategy 2019-2024 • EPA Annual National Greenhouse Gas Emissions Inventory reporting • Climate Action Regional Office • Consultations with DECC (at monitoring evaluation)	• Where targets are not achieved, the Council will liaise with the Regional Assembly and the Eastern and Midlands Climate Action Regional Office to establish reasons and develop solutions.
		• Adoption of renewable technologies	• Increase in upgraded sources of energy production from renewable sources		
		• Carbon dioxide (CO_2) emissions across the electricity generation, built environment and transport sectors • Numbers of buildings being upgraded and insulated	• Contribute towards achieving the target of a 51% reduction in GHG emissions from 2021 to 2030, and net-zero emissions no later than 2050		
		• Energy consumption, the uptake of renewable options and solid fuels for residential heating	• To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating		
		• Proportion of journeys made by private fossil fuel-based car compared to previous levels	• Decrease in the proportion of journeys made by residents of the County using private fossil fuel-based car compared to previous levels	• CSO data • Monitoring of Limerick City and County Council's Climate Change Adaptation Strategy 2019-2024	• Where trends toward carbon reduction are not recorded, the Council will liaise with the Regional Assembly and the Eastern and Midlands Climate Action Regional Office to establish reasons and develop solutions.
		• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• CSO data • Monitoring of Limerick City and County Council's Climate Change Adaptation Strategy 2019-2024	• Where proportion of population shows increase in private car use above previous CSO figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.

[19] Please also refer to relevant legislation and requirements under Section 4.10, Section 8.5 and Appendix I. 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.

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Cultural Heritage	CH	• Number of Monuments in the Record of Monuments and Places and areas of archaeological potential which have been recorded or subject to exploration as a result of development • Number of archaeological monuments and their settings damaged due to development	• To maintain and increase the number of archaeological features recorded and protected • No damage occurring to structures or monuments and their settings due to development	• Internal monitoring of likely significant environmental effects of grants of permission	• Damage to or loss of recorded monuments, or their setting would result in enforcement actions being taken. • Damage to or loss of Protected Structures, to be dealt with by enforcement. • Possible training courses, facilitated by bodies such as the Heritage council and Irish Georgian Society. • Where monitoring reveals visitor or development pressure is causing negative effects on designated archaeological or architectural heritage, the Council will work with Regional Assembly, Fáilte Ireland and the National Monuments Service and other stakeholders, as relevant, to address pressures through additional mitigation
		• Number and conservation status of structures in RPS • Number of buildings conserved and re-used for new development • Number of protected structures damaged due to development	• To increase the number and maintain the conservation status of Protected Structures • Increase investment through Built Heritage Investment and funding streams	• Consultation with DHLGH	
Landscape	L	• Quality of urban environment and halt in dereliction • Building height and design • Number of developments permitted that result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Plan	• Increase in quality of individual applications • 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	• Internal monitoring of likely significant environmental effects of grants of permission	• Enforcement through planning legislation and Derelict Sites Act • Adequate input into DM applications from ACO, Archaeologist and HO • 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