

SEA ENVIRONMENTAL REPORT

APPENDIX II – NON-TECHNICAL SUMMARY

FOR THE

CORK CITY DEVELOPMENT PLAN 2022-2028

for: Cork City Council

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Cork



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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report for the Cork City Development Plan 2022-2028. The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan. The Environmental Report has been prepared as part of a Strategic Environmental Assessment (SEA) process for the Plan.

What is SEA?

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

Why is SEA needed? The Benefits

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

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

Compact development can be accompanied by placemaking initiatives to enable the City, including its surrounding settlements, to become more desirable places to live – so that they maintain and improve services to existing and future communities.

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

An overlay of environmental sensitivities in Cork City is shown on Figure 1.1.

The Plan directs incompatible development away from the most sensitive areas in the City and focuses on directing: compact, sustainable development within and adjacent to the existing built-up footprint of the City, including its surrounding settlements; and sustainable development elsewhere. Development of areas within and adjacent to the existing built-up footprint, which are generally more robust, better serviced and better connected, will contribute towards environmental protection and sustainable development, including climate mitigation and adaptation.

Compatible sustainable development in the City'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.

There is a data gap relating to WFD surface water status data. There are a number of waterbodies within the Plan area with overall status currently not assigned to them and the term “unassigned status” applies in respect of these waterbodies. The SEA ensured that the Plan contains measures that will contribute towards the maintenance and improvement of status of all water bodies within the zone of influence.

What happens at the end of the process?

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

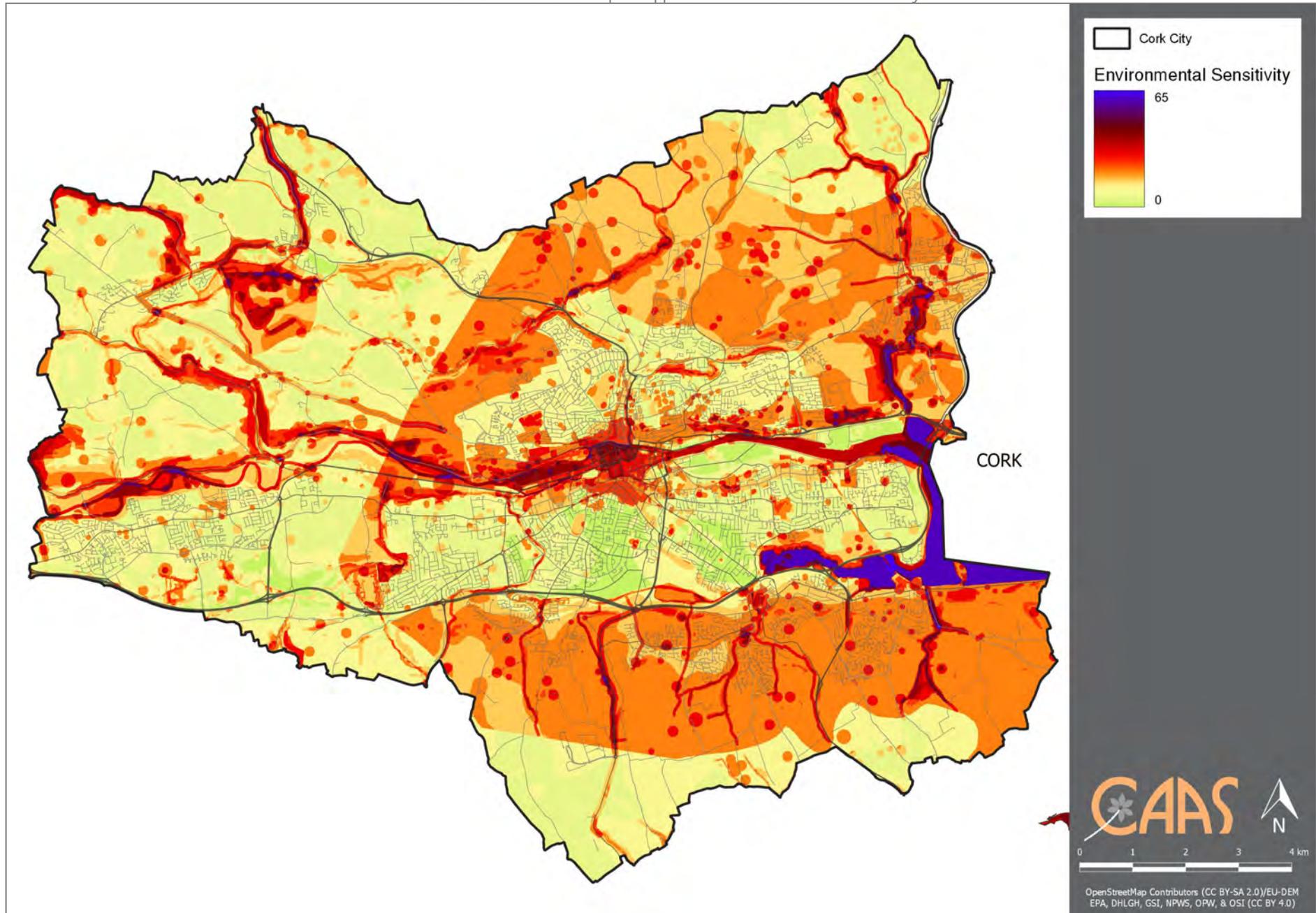


Figure 1.1 Environmental Sensitivities that the Plan directs incompatible development away from
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Section 2 The Plan

2.1 Introduction and Content

The Cork City Development Plan is a land use plan and overall strategy for the proper planning and sustainable development of the functional area of Cork City over the six-year period 2022-2028. The Plan sets out the Council's proposed policies and objectives for the development of the City over the Plan period.

The Plan comprises a series of separate, but closely linked and interrelated elements. The Plan comprises two volumes:

- Volume 1 – Written Statement
- Volume 2 – Mapped Objectives
- Volume 3 – Built Heritage Objectives

The structure of the Written Statement is as follows:

- Chapter 1 – Introduction
- Chapter 2 – Core Strategy
- Chapter 3 – Delivering Homes and Communities
- Chapter 4 – Transport and Mobility
- Chapter 5 – Climate and Environment
- Chapter 6 – Green and Blue Infrastructure, Open Space and Biodiversity
- Chapter 7 – Economy and Employment
- Chapter 8 – Heritage, Arts and Culture
- Chapter 9 – Environmental Infrastructure and Management
- Chapter 10 – Key Growth Areas and Neighbourhood Development Sites
- Chapter 11 – Placemaking and Managing Development
- Chapter 12 – Land Use Zonings
- Chapter 13 – Implementation
- Appendix 1 – Compliance with Ministerial Guidelines
- Appendix 2 – Strategic Environmental Assessment
- Appendix 3 – Appropriate Assessment
- Appendix 4 – Strategic Flood Risk Assessment

2.2 Strategic Vision is based on the following Key Strategic Principles

The Strategic Vision for Cork City included in the Plan is for Cork City to take its place as a world class city, driving local and regional growth, embracing diversity and inclusiveness and growing as a resilient, healthy, age-friendly and sustainable compact city with placemaking, communities and quality of life at its heart.

This Strategic Vision is based on the following Key Strategic Principles:

- Compact growth: Integrate land-use and transport planning to achieve a compact city with 50% of all new homes delivered within the existing built-up footprint of the City on regenerated brownfield, infill and greenfield sites identified in the Core Strategy, and to achieve higher population densities aligned with strategic infrastructure delivery.
- A city of neighbourhoods and communities: Develop a sustainable, liveable city of neighbourhoods and communities based on the 15-minute city concept, ensuring that placemaking is at the heart of all development.
- Sustainable and active travel: To implement the Cork Metropolitan Area Transport Study (CMATS) and develop a transformed sustainable transport system with a significant shift toward walking, cycling and public transport and to enshrine this principle in all developments across the City.
- Enhanced built and natural heritage: Protect, enhance, support and develop our built and natural heritage, our open spaces and parks, and our green and blue infrastructure, and expand our built heritage with new buildings, townscapes and public spaces achieved through the highest standards of architecture and urban design.
- A strong and diverse economy: Support Cork City's role as the economic driver for the region and the creation of a strong, resilient, diverse and innovative economy.
- A resilient City: Contribute to a framework for the transition to a low-carbon and climate-resilient City, resilient to extreme weather events, pandemics, economic cycles and other potential shocks.
- A healthy, inclusive and diverse city: Build on Cork City's status as a World Health Organisation designated Healthy City, offering an inclusive and vibrant environment for all whilst promoting healthy living and wellbeing.
- A connected city: Cork City will continue to be a highly connected city providing local, regional, national and international connectivity.
- A city of learning and culture: To build on Cork's designation as a UNESCO Learning City and the city's rich cultural heritage and to foster learning, culture, heritage and the arts throughout the City.

2.3 Relationship with other relevant Plans and Programmes

It is acknowledged that many of the major issues affecting the City's development are contingent on national policy and government funding. The Plan sits within a hierarchy of statutory documents setting out public policy. The Plan must comply with relevant higher-level strategic actions and will, in turn, guide lower-level strategic actions. These documents include plans and programmes such as those detailed in Appendix of the main SEA ER. 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 City Development Plan.

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

In order to be realised, projects included in the 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 AA, EIA 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 City is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified in Section 3.11, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Plan and in order to determine appropriate monitoring measures.

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

In the absence of a new Plan it is uncertain how permission for new development would be applied for and considered. The 2015-2021 Plan has contributed towards environmental protection within Cork City. If the 2015-2021 Plan was to expire and not be replaced by a new Plan, this would result in a deterioration of the City's planning and environmental protection framework. As a result, there would be an increased likelihood in the extent, magnitude and frequency of adverse effects on all environmental components occurring, including:

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

3.3 Biodiversity and Flora and Fauna

Information on biodiversity and flora and fauna that is relevant to project planning and development and associated environmental assessment and administrative consent of projects includes available information on designated ecological sites and protected species, ecological connectivity (including stepping stones and corridors) and non-designated habitats.

Cork City supports a variety of natural and semi-natural habitats and a wide range of plant and animal species, which have come under threat due to development pressures and increased demand for new development land.

Cork Harbour, the River Lee and associated water courses, estuaries, salt marshes, reedbeds and intertidal mudflats are of ecological importance, providing a habitat for a variety of plant and animal species including mosses, lichens and bats and act as a corridor for the movement of species between the surrounding countryside and urban areas. These areas contain many rare and threatened habitats and species of national and international importance, including those protected under the national and European legislation.

A network of urban green spaces, including gardens, parks, graveyards, amenity walks, hedgerows, railway lines and patches of woodland and scrub, provide habitats and ecological connectivity within the City and beyond.

Designated sites within and close to the City include Special Areas of Conservation¹ (SACs) and Special Protection Areas² (SPAs). These are mapped on Figure 3.1. There are three European sites (two SACs and one SPA) designated within/nearby, comprising:

- Great Island Channel SAC (001058) – c.1.40 km to the east of the City;
- Blackwater River (Cork/Waterford) SAC (002170) – c.7 km to the north of the City; and
- Cork Harbour SPA (004030) – partially within the eastern parts of the City.

CORINE³ land cover mapping shows that the most dominant land cover types are urban fabric (concentrated within the City's centre) and pastures and agricultural lands (in the areas surrounding the City's centre).

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 include: 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); and Climate change.

Ireland's Article 12 Birds Directive Reports and the 6th National Report under the Convention of Biological Diversity identify similar issues.

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.

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.

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.

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.

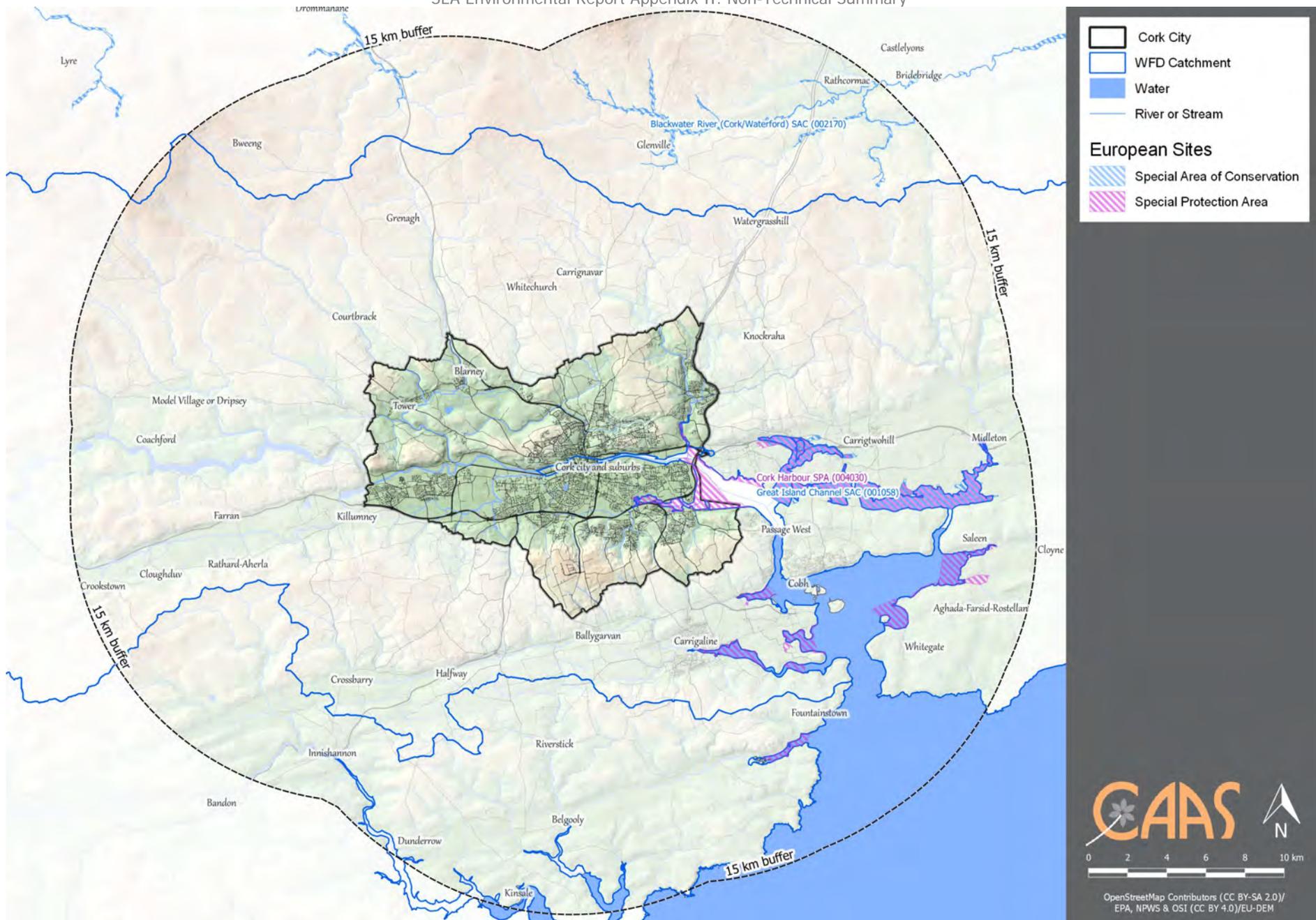


Figure 3.1 European sites within and within 15 km of the City

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3.4 Population and Human Health

In 2016 Census, the total population of the area that is now under the administration of Cork City Council⁴ was 210,853 persons, showing an increase since previous census by c. 5.1%. The population growth projections for the City are 257,852 persons by 2028⁵ and 274,000-286,000 persons by 2031 (as set out by the NPF and the Southern Regional Spatial Economic Strategy).

Cork City is the largest urban centre in the Southern region and it is recognised by the Regional Spatial Economic Strategy as one of five Metropolitan Areas in Ireland. Cork Metropolitan Area acts as an international location of scale, a complement to Dublin and a primary driver of economic and population growth in the Southern Region.

The Plan designates different City Areas as follows:

- City Centre;
- Docklands (City Docks, Tivoli Docks);
- City Suburbs (North East Suburb, North West Suburb, South East Suburb, South West Suburb);
- Urban Town (Ballincollig, Blarney, Glanmire, Tower); and
- City Hinterland.

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

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

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

Existing Problems

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

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

3.5 Soil

Urban soils (underlying the City Centre) and brown earths⁶ (to the north, south and west of the City Centre) are the two most dominant soil types in Cork City. There is an area of peat soil identified in the north-west of the City.

There are two Sites of Geological Interest identified within the area of Cork City: Blackrock Diamond Quarry and St. Joseph's Section on Lee Road.

Geological Survey of Ireland have identified that most of the City has relatively low levels of landslide susceptibility, with moderate to high susceptibility found mainly along steep river valleys in the centre, north and south of the City.

⁴ In 2019, the Cork City expanded to approx. five times its former size and the population of the City grew by c. 85,000. The Cork City boundary was expanded to include the areas of Douglas, Rochestown, Ballincollig, Tower, Blarney, Glanmire and Cork Airport.

⁵ Cork City Development Plan 2022-2028

⁶ Well drained mineral soils, associated with high levels of natural fertility.

3.6 Water

The City lies within the catchment of Lee, Cork Harbour and Youghal Bay. This catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery.

The main river within Cork City is the River Lee running west to east. Other waterbodies within the City include the Rivers Blackwater and Bandon, Glashaboy Estuary, Lee Estuary and Lough Mahon. The WFD status of sections of rivers within the City is classified as *moderate* (including Shournagh, Owenboy, Martin, Lee and Blarney) and *good* (including Martin, Glashaboy and Butlerstown). The WFD surface water status (2013-2018) of transitional waterbodies within and surrounding the City is identified as *moderate* (including Lough Mahon and Lee - Cork Estuary Upper) and *good* (including Glashaboy Estuary).

The WFD surface water status (2013-2018) within and downstream of Cork City is shown on Figure 3.2. The Outer Cork Harbour (downstream of Cork City) is identified as being of *good* status, Cork Harbour is identified as being of *moderate* status, Lower Bandon Estuary (transitional waterbody) is identified as being of *poor* status and Cuskinny Lake (transitional waterbody) is identified as being of *bad* status. The bathing water at Fountainstown (downstream of Cork City) is of *excellent* water quality⁷.

The WFD status (2013-2018) of groundwater underlying the City is mostly identified as being of *good* status, with an area of *poor*⁸ status underlying Tramore Valley Park to the south of Cork City Centre.

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter into groundwater. The vulnerability of aquifers is classified as being of Extreme or High vulnerability, in most of the City.

Certain areas across the City are at risk from flooding from sources including groundwater, pluvial⁹, fluvial¹⁰ and coastal¹¹. There is historic evidence of flooding in various locations across the City, including along the Rivers Blackwater, Bandon and Lee, Glashaboy Estuary, Lee Estuary and Lough Mahon.

Existing Problems

Subject to exemptions provided for by Article 4 of the WFD, based on available water data, certain surface and groundwater bodies will need improvement in order to comply with the objectives of the WFD.

The Plan includes provisions that will contribute towards improvements in the status of waters.

There is historic and predictive evidence of elevated levels of flood risk at various locations across the City.

⁷ The EPA Report (2020) Bathing Water Quality in Ireland 2019.

⁸ Area underlying Waste Facility (W0012-03).

⁹ Resulting from high intensity rainfall events where run-off volume exceeds capacity of surface water network.

¹⁰ Watercourse capacity is exceeded or the channel is blocked and excess water spills from the channel onto adjacent floodplains.

¹¹ Resulting from higher sea levels than normal causing the sea to overflow onto land. Such flooding is influenced by high tide level, storm surges and wave action.

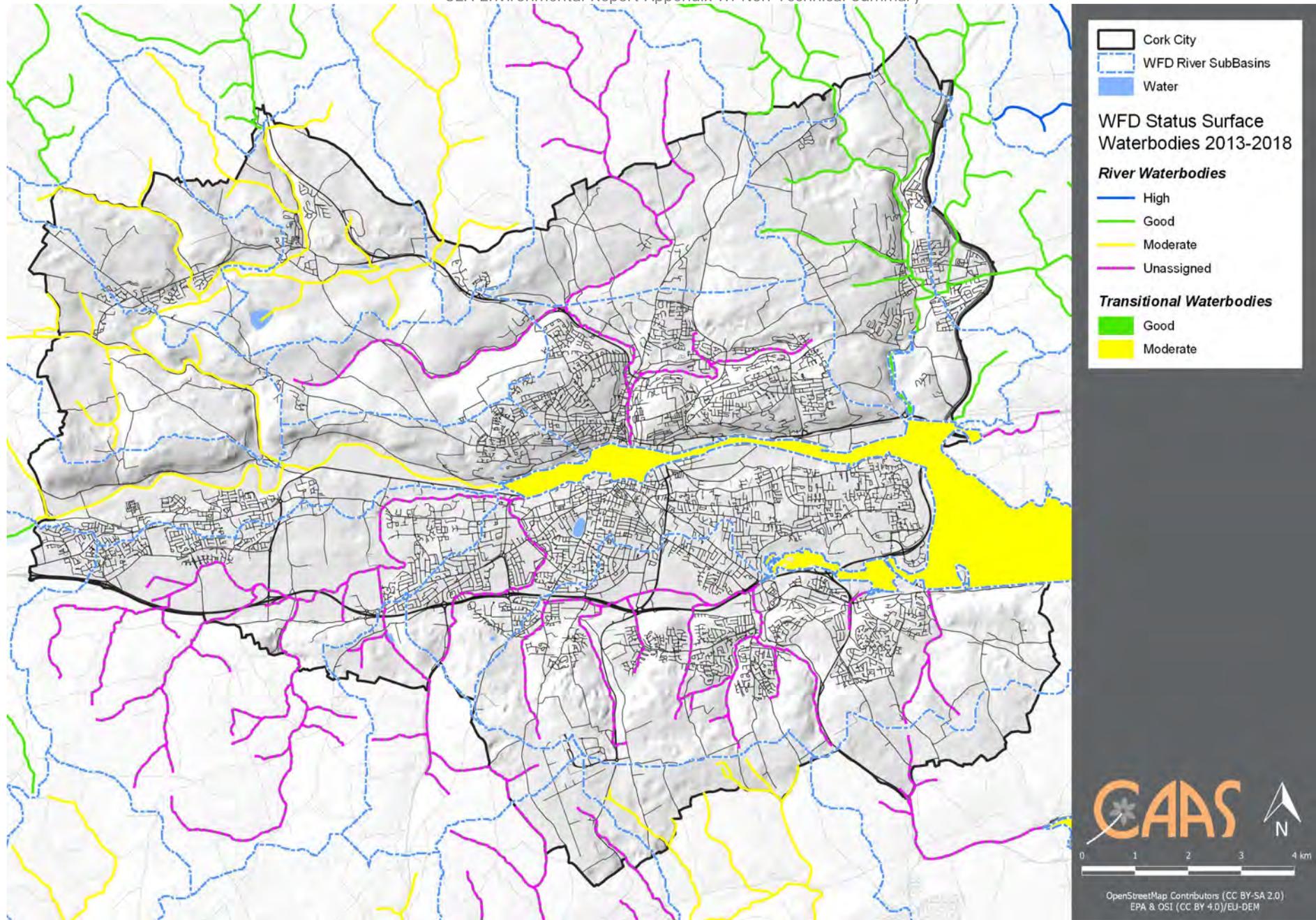


Figure 3.2 Surface Water Status (2013-2018)

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3.7 Air and Climatic Factors

Total emissions of greenhouse gases by humans come from various sectors including transport, agriculture, energy industries, manufacturing combustion, industrial processes, residential developments, commercial services developments, waste management processes and fluorinated gases equipment (such as refrigeration and fire protection systems).

The National Climate Action Plan 2021 is an all of Government plan to tackle climate change and bring about a step change in Ireland's climate ambition over the coming years. The Plan sets out an ambitious course of action over the coming years to address the diverse and wide-ranging impacts climate disruption is having on Ireland's environment, society, economic and natural resources. The Climate Action Plan sets out clear 2030 targets for each sector with the ultimate objective of achieving a transition to a competitive, low-carbon, climate-resilient, and environmentally sustainable society and economy by 2050. The Action Plan deals with both mitigation and adaptation.

Climate mitigation describes 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.

The Climate Change Advisory Council's Annual Review 2020 identifies that the most recent projections demonstrate that, under different assumptions, Ireland will not meet its emissions reduction targets, even with the additional policies and measures included in the National Development Plan. The projections also show that progress on reducing emissions is sensitive to the future path of fuel prices. A significant and sustained rate of emissions reduction of approximately - 2.5% per year is required to meet agreed objectives for 2050. It is noted that additional measures within the recent Climate Action Plan are not included.

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 Adaptation Framework Department of Communications, Climate Action and Environment, 2018), sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation. Under the Framework, a number of Government Departments will be required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for.

The Cork City Council Climate Change Adaptation Strategy 2019-2024 features a range of actions across a number of themes, including: local adaptation governance and business operations; infrastructure and built environment; land use and development; drainage, water and flood management; nature, natural resources and cultural infrastructure; citizen safety, health and wellbeing; and partnerships with other sectors and agencies. The main goals of this strategy are:

- To make Cork City as climate-resilient as possible, reducing the impacts of current and future climate change-related conditions and events; and
- To pro-actively engage with all citizens on the subject of climate action, such as climate change, climate change adaptation and climate change mitigation.

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

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

With regard to solutions, the report identifies that:

- To tackle the problem of particulate matter, clean ways of heating homes and improve energy efficiency of homes can be progressed; and
- To reduce the impact of nitrogen dioxide, transport options in the Government's Climate Action Plan can be implemented and transport choices can be considered by individuals.

In order to comply with European Directives relating to air quality, the EPA manages the National Ambient Air Quality Network and measures the levels of a number of atmospheric pollutants at locations across the country. The current¹² air quality within the City is identified by the EPA as being *good*.

3.8 Material Assets

Other material assets, in addition to those referred to below, covered by the SEA include archaeological and architectural heritage (see Section 3.9) natural resources of economic value, such as water and air (see Sections 3.6 and 1.1).

Public Assets and Infrastructure

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

Waste Water

The EPA's 2020 report *'Urban Wastewater Treatment in 2019'* identified that:

- Wastewater treatment at 19 towns and cities (including **Cork City**) did not meet European standards for the treatment of urban wastewater in 2018; and
- Wastewater from 48 areas (including **Cork City**) is the main significant pressure on waters at risk of pollution.

Cork City Council will work alongside and facilitate the delivery of Irish Water's Water Investment Plan to support and facilitate the delivery of new or improved wastewater treatment plants in the City. Wastewater plans and projects for Cork City include proposed upgrades to the Carrigrenan WWTP (which serves much of the Plan area including City suburbs, Little Island, Glanmire and Glounthaune areas) treatment process to allow compliance with its Waste Licence and to cater for future population growth.

There are separate treatment plants serving the urban towns of Ballincollig, Blarney/Tower and Kileens, as well as a number of smaller treatment plants serving settlements in the City's hinterland. In unserved areas and outside the main settlements, the main method of sewage disposal is by individual septic tanks and other types of wastewater treatment.

Spare treatment capacity is identified as being available in most WWTPs serving the City with the following levels of headroom (PE)¹³ available:

- Carrigrenan WWTP (122,180 PE);
- Ballinacollig WWTP (10,493 PE);
- Blarney WWTP (5,345 PE);
- Rosemount, Kilcully WWTP (6 PE); and
- Kileens WWTP (potential availability).

Water Supply

The EPA publishes their results in annual reports that are supported by Remedial Action Lists (RALs). The RAL identifies water supplies that are not in compliance with the Regulations mentioned above. The most recent available RAL (Q4 of 2020 published in January 2021) identifies two Cork City drinking water supplies:

- **The Glashaboy Water Supply** is listed on the most recent EPA RAL due to EPA treatment and management issues. This Water Supply Scheme has a supply volume of 20,010 m³/day, serving a population of 22,808 people. The upgrade of this plant is scheduled for completion in June 2024.
- **The Cork City Water Supply** is listed on the most recent EPA RAL due to EPA treatment and management issues. This Water Supply Scheme has a supply volume of 42,733 m³/day, serving a population of 87,114 people. The proposed plan of action to remedy this issue is to upgrade the Water Treatment Plant by December 2021.

Waste Management

Waste management across the City is guided by the Southern Waste Management Plan 2015-2021.

¹² 27/04/2021 (<http://www.epa.ie/air/quality/>)

¹³ WWTPs are described in terms of their designed treatment capacity, which is generally expressed as population equivalent (PE). This is a measurement of total organic biodegradable load, including industrial, institutional, commercial and domestic organic load, on a wastewater treatment plant, converted to the equivalent number of PEs. One person is considered to generate 60g of five-day Biochemical Oxygen Demand (BOD) per day. 1 PE is defined as being equivalent to 60g of BOD per day.

Transport

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

Land

The Plan seeks to assist with the reuse and regeneration of brownfield sites thereby contributing towards sustainable mobility and reducing the need to develop greenfield lands and associated potential adverse environmental effects. Brownfield lands are generally located within urban/suburban areas.

Existing Problems

There are a number of challenges with respect to the provision of water services infrastructure, some of which are summarised above. The provisions of the new City Development Plan will contribute towards protection of the environment with regard to impacts arising from material assets.

3.9 Cultural Heritage

Archaeological Heritage

Archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, put on a statutory basis by amendment to the National Monuments Act 1994, of sites and areas of archaeological significance, numbered and mapped.

Cork City is one of the oldest cities in Ireland and has a rich and significant archaeological heritage, ranging from seventh century monasteries to 11th century Viking settlements and 12th century Anglo-Norman stone walls. The medieval street pattern of Cork City is still evident today as is its historic trading centre maritime merchant ports.

There are 60 archaeological sites within Cork City Centre including standing stones and medieval walls and c. 400 entries to the RMP within the surrounding towns, villages and hinterland. Churches, houses, distilleries, factories and graveyards are amongst the most common recorded monuments and sites of significant archaeological, historic and cultural importance include St. Anne's Church, St. Fin Barre's Cathedral, Blarney Castle Estate and Elizabeth Fort.

Architectural Heritage

Records of Protected Structures are legislated for under Section 12 and Section 51 of the Planning and Development Act 2000 as amended. Protected structures are defined in the Planning and Development Act 2000 as amended as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. Examples of Protected Structures in the Plan area include churches, markets, gaols, post boxes and building fronts. Clusters of architectural heritage can be found in Cork City Centre and in settlements such as Blarney, Ballincollig and Glanmire.

Cork City has an important vernacular heritage with many important historic buildings and structures. Historic Street Character Areas are designated within Cork City and consist of groups of buildings with architectural and social interest, including a number of older residential areas outside the City Centre. Individual buildings of character are also identified, including farmhouses, cottages, stone walls and other local features that contribute to the architectural heritage of the area.

In addition to Protected Structures, the Planning and Development Act, 2000 provides the legislative basis for the protection of Architectural Conservation Areas (ACAs). An ACA is a place, area or group of structures or townscape that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures, whose character it is an objective to preserve in a development plan. There are various ACAs designated within the City.

Existing Problems

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

3.10 Landscape

The visual character of Cork City is due to its variety of landscapes and rich and diverse built and cultural heritage. Built around estuarine islands in the valley of the River Lee, Cork City is shaped by its rolling landscape, waterways and a rich mix of natural, built and cultural heritage. The Lee Valley runs through the centre of the City giving rise to steep hills to the north and to the south. The Lee Estuary flows into Cork Harbour to the east of the City.

The Cork City Council Landscape Study (2008)¹⁴ identified seven Landscape Character Areas, within the City:

- Estuarine/Riverine;
- Natural harbour;
- Historic urban core;
- Inner-city residential;
- Sub-urban residential;
- Urban sylvan character; and
- Urban industrial/commercial/Institutional.

Cork City Council seeks to protect and enhance the landscape character of the City by protecting the significant landscape elements that contribute to the general amenity of Cork City. Areas of High Landscape Value and Landscape Preservation Zones are identified in the Plan and must be considered when assessing planning applications. Areas of High Landscape Value display an intrinsic landscape character and a special amenity value. Landscape Preservation Zones are areas in need of special protection as their character and amenity value is considered to be to highly sensitive to development.

Existing Environmental Problems

New developments have resulted in changes to the visual appearance of lands within the City 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 that are required to be implemented. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan and the alternatives are evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.

Table 3.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
Biodiversity, Flora and Fauna	BFF	No net contribution to biodiversity losses or deterioration	<ul style="list-style-type: none"> • To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species • Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function • Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species • Enhance biodiversity in line with the National Biodiversity Action Plan and its targets • To protect, maintain and conserve the City'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,	<ul style="list-style-type: none"> • Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management • Ensure that existing population and planned growth is matched with the required public infrastructure and the required services • Safeguard the City's citizens from environment-related pressures and risks to health and well-being

¹⁴ This Study referred to the pre-2019 City area, and Cork City Council will undertake a revised landscape study that addresses the entirety of the administrative area including the urban towns, villages and suburbs.

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Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives
		educational and recreational environments	
Soil (and Land)	S	Ensure the long-term sustainable management of land	<ul style="list-style-type: none"> • Protect soils against pollution, and prevent degradation of the soil resource • Promote the sustainable use of infill and brownfield sites over the use of greenfield sites • Safeguard areas of prime agricultural land and designated geological sites
Water	W	Protection, improvement and sustainable management of the water resource	<ul style="list-style-type: none"> • Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the Water Framework Directive • Ensure water resources are sustainably managed to deliver proposed regional and City 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 • Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposals
Material Assets	MA	Sustainable and efficient use of natural resources	<ul style="list-style-type: none"> • Optimise existing infrastructure and provide new infrastructure to match population distribution proposals - 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, towns and grids
Air	A	Support clean air policies that reduce the impact of air pollution on the environment and public health	<ul style="list-style-type: none"> • To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture • Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency • Promote continuing improvement in air quality • Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution • Meet Air Quality Directive standards for the protection of human health – Air Quality Directive • Significantly decrease noise pollution by 2020 and move closer to WHO recommended levels
Climatic Factors	C	Achieving transition to a competitive, low carbon, climate-resilient economy that is cognisant of environmental impacts	<ul style="list-style-type: none"> • To minimise emissions of greenhouse gasses • Integrate sustainable design solutions into the City'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 places, features, buildings and landscapes of cultural, archaeological or architectural heritage
Landscape	L	Protect and enhance the landscape character	To implement the Plan's 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.

Based on the outputs of Cork City Capacity Study and other relevant supporting documents that directly informed the preparation of the Plan, Cork City Council have identified three alternatives from an initial sift of the following four options:

1. City Wide Growth Strategy
2. Transport Orientated Development no.1 (applying narrow walking bands)
3. Transport Orientated Development no.2 (applying wider walking bands)
4. Compact Liveable Growth

Option 2 has been discounted as this scenario is over reliant on the delivery of the light rail transport in the City, which is currently at the initial stage of design (route selection process). The construction and delivery of the light rail transport is a long-term project (post-2031) within the Cork Metropolitan Area Transportation Study (CMATS).

Cork City Council assessed the three remaining alternatives for the Plan, to determine whether or not they are available and appropriate.

4.2 Description of Alternatives Considered

Alternative 1: City Wide Growth

This alternative applies the densities allowable under the existing land uses zonings set out in the Cork City Development Plan 2015-2022 and the relevant zonings in the Cork County Municipal District Local Area Plans (2017). As such the alternative combines Cork City Councils and Cork County Councils current land use planning approach to the recently extended City Council area.

This scenario gives a full understanding of the current land use planning approach for the current Cork City administrative area, as extended on May 2019. The yields from all extant planning permissions are accounted for. Where no extant planning permission exists an average density, assumption has been applied based on the relevant land use zoning objective.

Alternative 2: Transport Orientated Development

This alternative focuses on the key transport routes and land use areas identified in the Cork Metropolitan Area Transportation Strategy (CMATS). A Transport Orientated Development approach is applied to future land use planning, by maximising the provision of housing, employment, public services and leisure space within close proximity to existing and future transport nodes (e.g. rail and/or bus) that are serviced by frequent, high quality services.

This alternative applies different densities at different locations, as appropriate; with higher densities where sustainable transport mode opportunities are planned for (e.g. light rail transport route). The yields from all extant planning permissions are accounted for.

Alternative 3: Compact Liveable Growth

This alternative seeks to develop Cork City as a compact, sustainable city of scale and the regional driver of growth by creating sustainable, liveable, integrated communities and neighbourhoods while ensuring that at least half (50%) of all new homes are delivered in the existing built up footprint.

A tiered approach to land use zoning is applied ensuring that new homes are provided at appropriate densities in brownfield and infill locations and in greenfield locations within and contiguous to existing City footprint.

4.3 Summary of Assessment

Having carried out a spatial assessment of the implications of the Plan that would be provided for by **Alternative 1 “City Wide Growth Scenario”** and the other alternatives, taking account of the higher-level NPF and Southern RSES objectives and the need to comply with the densities set out in Ministerial Guidelines, including those related to the Sustainable Residential Development in Urban Areas (2009) and Urban Development and Building Heights (2018), the Council confirm that Alternative 1 “City Wide Growth Scenario” as applied, would contribute towards proper planning, environmental protection and management and sustainable development to a significant degree less than Alternatives 2 and 3. The scenario allows for significant expansion into the existing city hinterland through the provision of low to medium densities. This scenario does not maximise the significant potential to deliver more appropriate densities to further justify the objective and projects identified in CMATS, particularly the light rail transport. Due to the extent of expansion proposed, this scenario also has greater potential negative impacts in terms of climate change, green and blue infrastructure management, the need for new physical and social infrastructure and the successful delivery of a compact, vibrant city of neighbourhoods.

Having carried out a spatial assessment of the implications of the Plan that would be provided for by **Alternative 2 “Transport Orientated Development Scenario”** and the other alternatives, taking account of the higher-level NPF and Southern RSES objectives and the need to comply with the densities set out in Ministerial Guidelines, including those related to the Sustainable Residential Development in Urban Areas (2009) and Urban Development and Building Heights (2018), the Council confirm that Alternative 2 “Transport Orientated Development Scenario” as applied, would contribute towards proper planning, environmental protection and management and sustainable development to a significant degree less than Alternative 3. The scenario achieves compact growth by focusing future development within areas that are highly accessible to frequent public transport services. The scenario is particularly successful in delivery high densities that can be used to justify the delivery of an LRT for the city in a shorter time frame than is set out in CMATS (post 2031). The compact nature of growth proposed also helps mitigate potential impacts in terms of climate change, green and blue infrastructure management and the reduced need for new physical and social infrastructure. However, this scenario is less successful in enhancing the existing wide range of neighbourhoods and towns to create a vibrant city of neighbourhoods. This scenario also primarily focuses on delivering higher density living, requiring an immediate and significant shift away from current average housing densities delivered in Cork City over the last 20 years.

Having carried out a spatial assessment of the implications of the Plan that would be provided for by **Alternative 3 “Compact Liveable Growth Scenario”**, taking account of the higher-level NPF and Southern RSES objectives and the need to comply with the densities set out in Ministerial Guidelines, including those related to the Sustainable Residential Development in Urban Areas (2009) and Urban Development and Building Heights (2018), the Council confirm that Alternative 3 “Compact Liveable Growth Scenario” as applied, would contribute towards proper planning, environmental protection and management and sustainable development more than Alternatives 1 and 3. The scenario achieves compact growth by primarily focusing future development within strategic sites, such as City Docks, sites located within the rich existing network of neighbourhoods, urban towns and hinterland settlements in the city and a number of expansion sites adjoining the city. The scenario focuses on developing areas accessible to frequent public transport services, delivering a range of increased densities that justify the delivery of an LRT, BusConnects routes and the Greenways as set out in CMATS. The compact nature of growth proposed also helps mitigate potential impacts in terms of climate change, green and blue infrastructure management and the reduced need for new physical and social infrastructure. This scenario is successful in enhancing the existing wide range of neighbourhoods and towns to create a vibrant city of neighbourhoods. The increased densities proposed in this scenario are challenging, requiring a stepped shift away from current average housing densities delivered in Cork City over the last 20 years.

4.4 Selected Alternatives for the Plan

The selected alternative for the Draft Plan that was placed on public display was Alternative 3 “Compact Liveable Growth Scenario”.

However, various alterations (see Section 5), were adopted as part of the final Plan that were previously advised against for planning and environmental reasons, meaning that the final, adopted Plan is a mix of Alternatives 1 and 3. These alterations would not provide the most evidence-based framework for development and have the potential to undermine sustainable development and proper planning.

4.5 Reasons for Selecting Chosen Alternatives

The selected alternatives for the Plan are indicated above.

These alternatives have been incorporated into the Plan having regard to both:

1. The environmental effects which are identified by the SEA and are summarised above; and
2. Planning - including social and economic - effects.

Section 5 Summary of Effects arising from Plan

5.1 Overall Effects

Table 5.1 summarises the overall environmental effects arising from 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 through both provisions integrated into the Plan – see summary at Section 6. Taking into account, *inter alia*, the detailed mitigation which has been integrated into the Plan, it was determined that significant residual adverse environmental effects will not occur.

5.2 Appropriate Assessment and Strategic Flood Risk Assessment

Stage 2 Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) have been undertaken alongside the preparation of the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The AA assesses the effects of the Plan on European Sites designated for certain habitats and species. The conclusion of the AA is that the Plan will not affect the integrity of the Natura 2000 network¹⁵.

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

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

¹⁵ 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/programme/project to proceed; and
 (c) adequate compensatory measures in place.

5.3 Instances whereby Environmental Considerations were not integrated into the Plan

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

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

However, a number of alterations were adopted by the Elected Members as part of the Plan that are internally inconsistent with the overall approach provided for by the Plan and were advised against by the Plan-preparation/SEA process. Advice provided on the environmental consequences of these alterations included:

These alterations would not provide the most evidence-based framework for development and have the potential to undermine sustainable development and proper planning.

As a result they would present additional, unnecessary and potentially significant adverse effects on various environmental components, including soil, water, biodiversity, the landscape, air and climatic factors and material assets. Land use zoning proposed is considered to be premature under various alterations in the context of current population targets.

Potentially significant adverse unnecessary effects, would be likely to include:

- Effects on ecology, ecological connectivity and non-designated habitats and species
- Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces
- Conflict with efforts to maximise sustainable compact growth and sustainable mobility
- Occurrence of adverse visual impacts (including erosion of designated Landscape Preservation Zones)
- Increased loadings on water bodies
- Effects on an aquifers of elevated and high vulnerability

Where such alterations are further from the centre of urban/suburban areas and are greenfield sites, potentially significant unnecessary adverse effects would be likely to include:

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

Taking into account the above, there is a need to reject these amendments in their current state in order to ensure proper planning and sustainable development.

Table 5.1 Overall Evaluation – Effects arising from the Plan

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 and associated Metropolitan Area Strategic Plan, the Cork Metropolitan Area Transportation Strategy, adjacent Development Plans and lower-tier land use plans			SEO Codes
	Significant Positive Effect, likely to occur	Potentially Significant Adverse Environmental Effects, if unmitigated	Likely Residual Adverse Non-Significant Effects	
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> Contribution towards protection of ecology (including designated sites, ecological connectivity, habitats) by facilitating development of lands (including those within and adjacent to the City Centre and the City's suburbs) 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 City and beyond. Contribution towards the maintenance of existing green infrastructure and associated ecosystem services, listed species, ecological connectivity and non-designated habitats. Contribution towards protection and/or maintenance of biodiversity and flora and fauna by contributing towards the protection of natural capital including the environmental vectors of air, water and soil. Biodiversity and flora and fauna includes biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species (including birds and bats), listed/protected species, ecological connectivity and non-designated habitats (including terrestrial and aquatic habitats), and disturbance to biodiversity and flora and fauna – including terrestrial and aquatic biodiversity and flora and fauna. Sustains existing sustainable rural management practices – and the communities who support them – to ensure the continuation of long-established managed landscapes and the flora and fauna that they contain. 	<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna; Habitat loss, fragmentation and deterioration, including patch size and edge effects; and Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species such as birds and bats. 	<ul style="list-style-type: none"> Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces. Losses or damage to ecology (these would be in compliance with relevant legislation). 	BFF

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Environmental Component	Environmental Effects, in combination with the wider planning framework Effects include in-combination effects that are planned for through the wider planning framework including the NPF and associated NDP 2018, the Southern RSES and associated Metropolitan Area Strategic Plan, the Cork Metropolitan Area Transportation Strategy, 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	<ul style="list-style-type: none"> • Promotion of economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management. • Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the City Centre and the City's suburbs) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-served lands elsewhere in the City and beyond. • Contribution towards the protection of human health by facilitating development of lands (including those within and adjacent to the City Centre and the City's suburbs) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-served lands elsewhere in the City and beyond. • Contributes towards protection of human health as a result of contributing towards the protection of natural capital including environmental vectors, including air and water. 	<ul style="list-style-type: none"> • Potential adverse effects arising from flood events. • Potential interactions if effects arising from environmental vectors. 	<ul style="list-style-type: none"> • Potential interactions with residual effects on environmental vectors – please refer to residual adverse effects under “Soil”, “Water” and “Air and Climatic Factors” below. 	PHH
Soil	<ul style="list-style-type: none"> • Contribution towards the protection of soils (including those used for agriculture) and designated sites of geological heritage by facilitating development of lands (including those within and adjacent to the City Centre and the City's suburbs) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-served lands elsewhere in the City and beyond. • Contribution towards the protection of the environment from contamination the highest standards of remediation, and where appropriate to consultations with the EPA and other relevant bodies, will be required to resolve any instances of environmental pollution created by contaminated land. 	<ul style="list-style-type: none"> • Potential adverse effects on the hydrogeological and ecological function of the soil resource, including as a result of development on contaminated lands. • Potential for riverbank and coastal erosion. 	<ul style="list-style-type: none"> • Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces. • Riverbank erosion will continue to occur naturally over time and is likely to be enhanced by climate change. 	S

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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 and associated Metropolitan Area Strategic Plan, the Cork Metropolitan Area Transportation Strategy, 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	<ul style="list-style-type: none"> • Contribution towards the protection of water by facilitating development of lands (including those within and adjacent to the City Centre and the City's suburbs) that have relatively low levels of environmental sensitivities and are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop more sensitive, less well-served lands elsewhere in the City and beyond. • Contributions towards the protection of water resources including the status of surface and groundwaters and water-based designations. • Contribution towards flood risk management and appropriate drainage. 	<ul style="list-style-type: none"> • Potential adverse effects upon the status of water bodies and entries to the WFD Register of Protected Areas (ecological and human value), arising from changes in quality, flow and/or morphology. • Increase in flood risk and associated effects associated with flood events. 	<ul style="list-style-type: none"> • Any increased loadings as a result of development to comply with the River Basin Management Plan. • Flood related risks remain due to uncertainty with regard to extreme weather events – however such risks will be mitigated by measures that have been integrated into the Plan. 	W
Material Assets	<ul style="list-style-type: none"> • Contribution towards appropriate provision of infrastructure and services to existing population and planned growth by facilitating compact development of lands (including those within and adjacent to the City Centre and the City's suburbs) that are served (or can be more easily served) by infrastructure and services, thereby helping to avoid the need to develop less well-served lands elsewhere in the City 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 sustainable compact growth, sustainable mobility, sustainable design and energy efficiency. 	<ul style="list-style-type: none"> • Failure to provide adequate and appropriate waste water treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts). • Failure to adequately treat surface water run-off that is discharged to water bodies (water services infrastructure and capacity ensures the mitigation of potential conflicts). • Failure to comply with drinking water regulations and serve new development with adequate drinking water (water services infrastructure and capacity ensures the mitigation of potential conflicts). • Increases in waste levels. • Potential impacts upon public assets and infrastructure. • Interactions between agriculture and soil, water, biodiversity and human health - including phosphorous and nitrogen deposition as a result of agricultural activities and the production of secondary inorganic particulate matter. 	<ul style="list-style-type: none"> • Exceedance of capacity in critical infrastructure risks remain, including due to uncertainty with regard to climate – however, such risks will be mitigated by: measures, including those requiring the timely provision of critical infrastructure, and compliance with the Water Framework Directive and associated River Basin Management Plan. • Residual wastes to be disposed of in line with higher-level waste management policies. • Any impacts upon public assets and infrastructure to comply with statutory planning/consent-granting framework. 	MA

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

Section 6 Mitigation and Monitoring Measures

6.1 Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan. Various environmental sensitivities and issues have been communicated to the Council through the SEA, 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 the:

- Strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development¹⁶;
- Considering alternatives for the Plan¹⁷;
- Integration of environmental considerations into zoning provisions of the Plan¹⁸; and
- Integration of individual SEA, AA and SFRA provisions into the text of the Plan.

6.2 Monitoring

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

¹⁶ Far in advance of both the submission of the pre-Draft Plan to the Elected Members for approval, the placing of the Draft Plan on public display and the adoption of the Plan, Cork City Council undertook various works in order to inform the preparation of the Plan.

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

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

¹⁷ Although strategic alternatives in relation to the content of the Plan were significantly limited for the Plan (see Section 4), as part of the Plan preparation/SEA process, the Council considered a number of alternatives for the Plan. These alternatives were assessed by the SEA process and the findings of this assessment informed the selection of preferred alternatives, facilitating an informed choice with respect to the type of Plan that was prepared and placed on public display.

¹⁸ Environmental considerations were integrated into the Plan's zoning through an interdisciplinary approach. Zoning has been applied in a way that primarily seeks to achieve sustainable and compact growth, taking into account the various requirements set out in the higher-level NPF and Southern RSES. The detailed Plan preparation process undertaken by the Planning Department combined with input from consultants seeks to facilitate zoning that will help to avoid inappropriate development being permitted in areas of elevated sensitivity, such as in areas at risk of flooding or ecological sensitivity. Various provisions have been integrated into the Plan that provide for flood risk management and ecological protection and management at project level. Also taken into account were environmental sensitivities relating to ecology, cultural heritage, landscape and water, as well as the overlay mapping of environmental sensitivities.

Table 6.1 Indicators, Targets, Sources and Remedial Action

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Biodiversity, Flora and Fauna	BFF	<ul style="list-style-type: none"> Condition of European sites 	<ul style="list-style-type: none"> Require all local level land use plans to include ecosystem services and green/blue infrastructure provisions in their land use plans and as a minimum, to have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species Implement and review, as relevant, the City's Heritage and Biodiversity Plan 	<ul style="list-style-type: none"> DHLGH report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years)¹⁹ DHLGH National Birds Directive Monitoring Report for the under Article 12 (every 3 years)²⁰ Consultations with the NPWS²¹ 	<ul style="list-style-type: none"> Where condition of European sites is found to be deteriorating this will be investigated with the Regional Assembly and the 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.
		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Require all local level land use plans to include ecosystem services and green/blue infrastructure provisions in their land use plans and as a minimum, to have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species Implement and review, as relevant, the City's Heritage and Biodiversity Plan 	<ul style="list-style-type: none"> Internal review of local land use plans 	<ul style="list-style-type: none"> Review internal systems
		<ul style="list-style-type: none"> SEAs and AAs as relevant for new Council policies, plans, programmes etc. 	<ul style="list-style-type: none"> Screen for and undertake SEA and AA as relevant for new Council policies, plans, programmes etc. 	<ul style="list-style-type: none"> Internal monitoring of preparation of local land use plans 	<ul style="list-style-type: none"> Review internal systems
		<ul style="list-style-type: none"> Status of water quality in the City's water bodies 	<ul style="list-style-type: none"> Included under Water below 	<ul style="list-style-type: none"> Included under Water below 	<ul style="list-style-type: none"> Included under Water below
		<ul style="list-style-type: none"> Compliance of planning permissions with Plan measures providing for the protection of Biodiversity and flora and fauna – see Chapter 6 “Green and Blue Infrastructure Open Space and Biodiversity” 	<ul style="list-style-type: none"> For planning permission to be only granted when applications demonstrate that they comply with all Plan measures providing for the protection of biodiversity and flora and fauna – see Chapter 6 “Green and Blue Infrastructure Open Space and Biodiversity” 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission²² 	<ul style="list-style-type: none"> Review internal systems
Population and Human Health	PHH	<ul style="list-style-type: none"> Implementation of Plan measures relating to the promotion of economic growth as provided for by Chapter 4 “Economy and Employment” 	<ul style="list-style-type: none"> For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to the promotion of economic growth as provided for by Chapter 4 “Economy and Employment” By 2020 all citizens will have access to speeds of 30Mbps, and that 50% of citizens will be subscribing to speeds of 100Mbps (Also relevant to Material Assets) 	<ul style="list-style-type: none"> Internal review of progress on implementing Plan objectives Consultations with DECC 	<ul style="list-style-type: none"> Review internal systems Consultations with DECC
		<ul style="list-style-type: none"> Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Plan 	<ul style="list-style-type: none"> No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan 	<ul style="list-style-type: none"> Consultations with the Health Service Executive and EPA 	<ul style="list-style-type: none"> Consultations with the Health Service Executive and EPA
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Cork City Council's Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.
		<ul style="list-style-type: none"> Number of spatial plans that include specific green infrastructure mapping 	<ul style="list-style-type: none"> Require all local level land use plans to include specific green infrastructure mapping 	<ul style="list-style-type: none"> Internal review of local land use plans 	<ul style="list-style-type: none"> Review internal systems

¹⁹ 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.

²⁰ 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.

²¹ 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.

²² 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.

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Soil (and Land)	S	<ul style="list-style-type: none"> Proportion of population growth occurring on infill and brownfield lands compared to greenfield (also relevant to Material Assets) 	<ul style="list-style-type: none"> Maintain built surface cover nationally to below the EU average of 4% as per the NPF In accordance with National Policy Objectives of the National Planning Framework, a minimum of 50% of the housing growth targeted in the City is to be delivered within the existing built-up footprint To map brownfield and infill land parcels across the City 	<ul style="list-style-type: none"> EPA Geoportal Compilation of greenfield and brownfield development for the DHLGH AA/Screening for AA for each application 	<ul style="list-style-type: none"> Where the proportion of growth on infill and brownfield sites is not keeping pace with the targets set in the NPF and the RSES, the Council will liaise with the Regional Assembly to establish reasons and coordinate actions to address constraints to doing so.
		<ul style="list-style-type: none"> Instances where contaminated material generated from brownfield and infill must be disposed of 	<ul style="list-style-type: none"> Dispose of contaminated material in compliance with EPA guidance and waste management requirements 	<ul style="list-style-type: none"> Internal review of grants of permission where contaminated material must be disposed of 	<ul style="list-style-type: none"> Consultations with the EPA and Development Management
		<ul style="list-style-type: none"> Environmental assessments and AAs as relevant for applications for brownfield and infill development prior to planning permission 	<ul style="list-style-type: none"> Screen for and undertake environmental assessments and AA as relevant for applications for brownfield and infill development prior to planning permission 	<ul style="list-style-type: none"> Internal monitoring of grants of permission 	<ul style="list-style-type: none"> Review internal systems
Water	W	<ul style="list-style-type: none"> Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD 	<ul style="list-style-type: none"> Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' Implementation of the objectives of the River Basin Management Plan 	<ul style="list-style-type: none"> EPA Monitoring Programme for WFD compliance²³ 	<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> Number of incompatible developments permitted within flood risk areas 	<ul style="list-style-type: none"> Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Programmed delivery of Irish Water infrastructure for all key growth towns in line with Irish Water Investment Plan and prioritisation programme to ensure sustainable growth can be accommodated Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan 	<ul style="list-style-type: none"> 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 individual on-site wastewater treatment systems are proposed, for planning permission to be only granted when applications demonstrate that the outfall from the individual on-site wastewater treatment system 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 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission Consultations with the Irish Water DHLGH in conjunction with Local Authorities 	<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> CSO data Monitoring of Cork City Council's Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above CSO 2016 figures, the Council will coordinate with the Regional Assembly, the DHLGH, DECC and NTA to develop a tailored response.

²³ Including monitoring of water quality and nitrogen deposition due to bioenergy and agricultural projects where available.

SEA Environmental Report Appendix II: Non-Technical Summary

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action		
Air	A	<ul style="list-style-type: none"> Proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels of 74% NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	<ul style="list-style-type: none"> Decrease in proportion of journeys made by private fossil fuel-based car compared to 2016 National Travel Survey levels Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter 	<ul style="list-style-type: none"> CSO data Data from the National Travel Survey EPA Air Quality Monitoring Consultations with Department of Transport and Department of Environment, Climate and Communications 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above CSO 2016 figures, Council will coordinate with the Regional Assembly, DHLGH, DECC and NTA to develop a tailored response. See also entry under Population and human health above 		
Climatic Factors	C	<ul style="list-style-type: none"> Implementation of Plan measures relating to climate reduction targets 	<ul style="list-style-type: none"> For review of progress on implementing Plan objectives to demonstrate successful implementation of measures relating to climate reduction targets 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Review internal systems 		
		<ul style="list-style-type: none"> A competitive, low-carbon, climate-resilient and environmentally sustainable economy 	<ul style="list-style-type: none"> Contribute towards transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050 	<ul style="list-style-type: none"> Monitoring of Cork City Council's Climate Change Adaptation Strategy 2019-2024 EPA Annual National Greenhouse Gas Emissions Inventory reporting Climate Action Regional Office Consultations with DECC 	<ul style="list-style-type: none"> 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. 		
		<ul style="list-style-type: none"> Share of renewable energy in transport 	<ul style="list-style-type: none"> Contribute towards the target of the Renewable Energy Directive (2009/28/EC), for all Member States to reach a 10% share of renewable energy in transport by facilitating the development of electricity charging and transmission infrastructure, in compliance with the provisions of the Plan 				
		<ul style="list-style-type: none"> Carbon dioxide (CO₂) emissions across the electricity generation, built environment and transport sectors 	<ul style="list-style-type: none"> Contribute towards the target of aggregate reduction in carbon dioxide (CO₂) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors 				
		<ul style="list-style-type: none"> Energy consumption, the uptake of renewable options and solid fuels for residential heating 	<ul style="list-style-type: none"> To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating 				
		<ul style="list-style-type: none"> Proportion of journeys made by private fossil fuel-based car compared to 2016 levels 	<ul style="list-style-type: none"> Decrease in the proportion of journeys made by residents of the City using private fossil fuel-based car compared to 2016 levels 			<ul style="list-style-type: none"> CSO data Monitoring of Cork City Council's Climate Change Adaptation Strategy 2019-2024 	<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above 2016 CSO figures 				
Cultural Heritage	CH	<ul style="list-style-type: none"> Percentage of entries to the Record of Monuments and Places, and the context these entries within the surrounding landscape where relevant, protected from adverse effects resulting from development which is granted permission under the Plan 	<ul style="list-style-type: none"> Protect entries to the Record of Monuments and Places, and the context of these entries within the surrounding landscape where relevant, from adverse effects resulting from development which is granted permission under the Plan 			<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Where monitoring reveals visitor or development pressure is causing negative effects on designated archaeological or architectural heritage, the Council will work with the Regional Assembly, Fáilte Ireland and the National Monuments Service and other stakeholders, as relevant, to address pressures through additional mitigation.
		<ul style="list-style-type: none"> Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from significant adverse effects arising from new development granted permission under the Plan 	<ul style="list-style-type: none"> Protect entries to the Record of Protected Structures and Architectural Conservation Areas and their context from significant adverse effects arising from new development granted permission under the Plan 	<ul style="list-style-type: none"> Consultation with DHLGH 			
Landscape	L	<ul style="list-style-type: none"> Number of developments permitted that result in avoidable adverse visual impacts on the landscape, especially with regard to landscape designations, resulting from development which is granted permission under the Plan 	<ul style="list-style-type: none"> No developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape designations, resulting from development which is granted permission under the Plan 	<ul style="list-style-type: none"> Internal monitoring of likely significant environmental effects of grants of permission 	<ul style="list-style-type: none"> Where monitoring reveals developments permitted which result in avoidable adverse visual impacts on the landscape, the Council will re-examine Plan provisions and the effectiveness of their implementation 		