

STRATEGIC ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL REPORT

FOR THE

WATERFORD METROPOLITAN AREA TRANSPORT STRATEGY 2040

for: National Transport Authority

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List of Abbreviations

AA	Appropriate Assessment
ACA	Architectural Conservation Area
CSO	Central Statistics Office
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EU	European Union
GSI	Geological Survey of Ireland
pNHA	Proposed Natural Heritage Area
NDP	National Development Plan 2021-2030
NHA	Natural Heritage Area
NIFTI	National Investment Framework for Transport in Ireland
NPF	National Planning Framework 2040
NTA	National Transport Authority
OPW	Office of Public Works
RBD	River Basin District
RMP	Record of Monuments and Places
RPA	Register of Protected Areas
RBMP	River Basin Management Plan
RSES	Regional Spatial and Economic Strategy
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEO	Strategic Environmental Objective
SI No.	Statutory Instrument Number
SPA	Special Protection Area
SRA	Southern Regional Assembly
TII	Transport Infrastructure Ireland
WFD	Water Framework Directive
WMA	Waterford Metropolitan Area
WMATS	Waterford Metropolitan Area Transport Strategy 2040

Glossary

Appropriate Assessment

The obligation to undertake Appropriate Assessment derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC. AA is a focused and detailed impact assessment of the implications of a strategic action (such as a plan or programme) or project, alone and in combination with other strategic actions and projects, on the integrity of a European Site in view of its conservation objectives.

Biodiversity and Flora and Fauna

Biodiversity is the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems' (United Nations Convention on Biological Diversity 1992).

Flora is all of the plants found in a given area.

Fauna is all of the animals found in a given area.

Environmental Problems

Annex I of Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the assessment of the effects of certain Plans and programmes on the environment (the Strategic Environmental Assessment Directive) requires that information is provided on 'any existing environmental problems which are relevant to the plan or programme', thus, helping to ensure that the proposed strategic action does not make existing environmental problems worse.

Environmental problems arise where there is a conflict between current environmental conditions and ideal targets. If environmental problems are identified at the outset they can help focus attention on important issues and geographical areas where environmental effects of the plan, programme, Strategy, etc. may be likely.

Environmental Vectors

Environmental vectors are 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.

Mitigate

To make or become less severe or harsh.

Mitigation Measures

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration should be given in the first instance to preventing such effects or, where this is not possible, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: avoid effects; reduce the magnitude or extent, probability and/or severity of effects; repair effects after they have occurred; and compensate for effects, balancing out negative impacts with other positive ones.

Protected Structure

Protected Structure is the term used in the Planning and Development Act and Regulations (as amended) to define a structure included by a planning authority in its Record of Protected Structures. Such a structure shall not be altered or demolished in whole or part without obtaining planning permission or confirmation from the planning authority that the part of the structure to be altered is not protected.

Recorded Monument

A monument included in the list and marked on the map which comprises the Record of Monuments and Places that is set out county by county under Section 12 of the National Monuments (Amendment) Act, 1994 by the Archaeological Survey of Ireland. The definition includes Zones of Archaeological Potential in towns and all other monuments of archaeological interest which have so far been identified. Any works at or in relation to a recorded monument requires two months' notice to the former Department of the Environment, Heritage and Local Government (now Department of Culture, Heritage and the Gaeltacht) under Section 12 of the National Monuments (Amendment) Act, 1994.

Scoping

Scoping is the process of determining what issues are to be addressed, and setting out a methodology in which to address them in a structured manner appropriate to the plan, programme, Strategy, etc.. Scoping is carried out in consultation with appropriate environmental authorities.

Strategic Actions

Strategic actions include: *Policies/Strategies*, which may be considered as inspiration and guidance for action and which set the framework for Plans and programmes; *Plans*, sets of co-ordinated and timed objectives for the implementation of the policy; and *Programmes*, sets of projects in a particular area.

Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt it.

Strategic Environmental Objective (SEO)

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level and are used as standards against which the provisions of the Strategy and the alternatives were 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.

Section 1 SEA Introduction and Background

1.1 Introduction and Terms of Reference

This is the Strategic Environmental Assessment (SEA) Environmental Report for the Waterford Metropolitan Area Transport Strategy 2040 (referred to hereafter as the Strategy). It has been undertaken by CAAS Ltd. on behalf of the National Transport Authority.

The purpose of this report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Strategy. The SEA is carried out in order to comply with the provisions of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) as amended. This report should be read in conjunction with the Strategy.

1.2 SEA Definition

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before such decisions are made. *Environmental Impact Assessment*, or EIA, is generally used for describing the process of environmental assessment for individual projects, while *Strategic Environmental Assessment* or SEA is the term which has been given to the environmental assessment of plans and programmes, which help determine the nature and location of individual projects taking place. SEA is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme, in order to ensure that these effects are adequately addressed at the earliest appropriate stages of decision-making in tandem with economic, social and other considerations.

1.3 SEA Directive and its transposition into Irish Law

Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the Environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including transport.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of Regulations became operational on 21st July 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011) and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (SI No. 201 of 2011).

1.4 Implications for the Strategy

The SEA Directive [Article 3 (2)] and associated transposing Regulations, as amended, outline what type of plans and programmes SEA is mandatory for. Subject to certain exceptions, SEA must be carried out for all plans and programmes:

- (a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects that are subject to the EIA Directive, as amended, or

(b) which, in view of the likely effect on sites, have been determined to require an assessment¹ pursuant to Article 6 or 7 of Habitats Directive 92/43/EEC.

Furthermore, the Directive and the transposing Regulations, as amended, outline situations whereby SEA Screening must be undertaken. Screening is the process for deciding whether a particular plan/programme, other than those for which SEA is mandatory, would be likely to have significant environmental effects, and would thus warrant SEA.

Although there is an existing framework for future development consent of transport projects that may be progressed within the Waterford Metropolitan Area, the Strategy will further contribute towards this framework and will be taken into account alongside other policies, plans and programmes as relevant. Various case law has been made that relates to SEA, including ECJ judgement on a Belgian Government Order regarding wind farm development [*ECLI:EU:C:2016:816, Judgement of the Court (Second Chamber), 27 October 2016, Patrice D'Oultremont and Others v Région wallonne*]. This Judgement indicates that "plans and programmes" referred to by the SEA Directive relate to any measures which establish, by defining rules and procedures for scrutiny applicable to the sector concerned, a significant body of criteria and detailed rules for the grant of administrative consent of projects likely to have significant effects on the environment.

The Waterford Metropolitan Area Transportation Strategy is considered a transport plan/programme that will make significant contributions towards the framework for future development consent of transport projects that are subject to the EIA Directive, as amended. Therefore, taking into account the above requirements, SEA is mandatory for the Strategy.

The findings of the SEA are expressed in this Environmental Report, an earlier version of which accompanied the original Draft Strategy on public display and has been updated to take account of recommendations made in

submissions and minor modifications² to the Draft Strategy.

The findings of this report and other related SEA output has been taken into account during the consideration of the Draft Plan and before it was finalised. On finalisation of the Strategy, an SEA Statement is prepared which summarises, inter alia, how environmental considerations have been integrated into the Strategy.

¹ Also referred to as an Appropriate Assessment

² Minor modifications were subject to Screening for SEA and AA and it was determined that, considering the measures that have been already integrated into the Draft Strategy, modifications would not be likely to result in either significant environmental effects or potential effects on any European site.

Section 2 The Transport Strategy

2.1 Introduction

The National Planning Framework 2040 (NPF) envisages that the Waterford Metropolitan Area (WMA) will become the growth engine of the South-East Region with projected growth of at least 50% during the period up to 2040. This projected population, employment and education growth brings opportunities for the development of the WMA.

This projected population and associated economic growth will result in a significant increase in the demand for travel. This demand needs to be managed and planned for carefully to safeguard and enhance the WMA's attractiveness to live, work, visit and invest in.

Current congestion and poor journey time reliability for users during core times of the day in the WMA already highlights the limited capacity within the existing transport network to cater for additional motor traffic.

In common with the other regional metropolitan areas of Cork, Limerick and Galway, there is a legacy of car dependency in the WMA. This has contributed to a wide range of economic, environmental, and social issues including longer commutes, declining urban centres, poor public health, reduced air quality and noise pollution.

To mitigate this, land use planning and transport planning needs to be far more closely aligned. This will discourage the use of the private car, particularly for short trips, to fundamentally change how people move around the WMA. This requires a more efficient use of valuable street and road space and a prioritisation of walking, cycling and public transport.

The Waterford Metropolitan Area Transport Strategy 2040 (WMATS or the 'Strategy') has been developed by the National Transport Authority in collaboration with Waterford City and County Council, Kilkenny County Council, Southern Regional Assembly (SRA) and Transport Infrastructure Ireland (TII). It has also been informed by pre-consultation submissions from several stakeholders. WMATS is intended to be subject to periodic review at approximately six-year intervals

2.2 Strategy Vision

The proposed Vision for WMATS is aligned with that outlined in the RSES / Metropolitan Area Strategic Plan (MASP): To set the framework for an accessible, high-quality and integrated transport network that enables the sustainable growth of the Waterford Metropolitan Area as a key regional driver of growth in the South-East Region, and an international competitive European city region as envisaged by the National Planning Framework 2040.

2.3 Strategy Objectives

The Strategic Objectives of the Strategy are as follows:

- To meet the demand generated by future growth of the WMA through the provision of an efficient transport network.
- To prioritise sustainable transport and active travel to reduce car dependency.
- The provision of a high level, citywide public transport system connecting to key destinations within high demand corridors.
- To increase transport capacity where needed to achieve the strategy outcomes.
- To deliver a fully accessible and inclusive transport system.
- To enhance the public realm of the WMA through demand management measures and transport interventions.
- To minimise the impact of motorised traffic in urban centres.
- To identify and protect key strategic routes for the movement of freight traffic.

2.4 Relationship with other relevant Plans and Programmes

WMATS is a metropolitan area-scale plan and is directly informed by National and Regional Level policies and, in particular, the Regional Spatial and Economic Strategy (RSES) and the Waterford Metropolitan Area Strategic Plan (MASP). The key national policy documents are the National Planning Framework 2040 (NPF), the National Development Plan 2021-2030 (NDP) and the National Investment Framework for Transport in Ireland (NIFTI) and the recently published National Sustainable Mobility Policy.

The NPF sets out Ireland's planning policy direction up to 2040; the NDP sets out the investment priorities that will underpin the successful implementation of the NPF up to 2030; and NIFTI sets out the strategy for the development and management of Ireland's land transport network (walking, cycling, public transport and roads) over the next two decades.

Policy documents relevant to WMATS include, but are not limited to:

- National Planning Framework 2040;
- National Development Plan 2021-2030;
- National Investment Framework for Transport in Ireland;
- Climate Action Plan 2021;
- National Cycle Policy Framework 2009-2020;
- Smarter Travel - A Sustainable Transport Future;
- Design Manual for Urban Roads and Streets;
- Regional Spatial and Economic Strategy for the Southern Region and associated Metropolitan Area Strategic Plan;
- National Sustainable Mobility Policy; and
- The relevant City and County Development Plans and Local Plans.

The National Cycle Policy Framework 2009-2020 and Smarter Travel - A Sustainable Transport Future have been superseded by the National Sustainable Mobility Policy.

The hierarchy of strategic actions, such as plans and programmes, within which the Strategy sits include those detailed in Appendix I of this SEA Environmental Report (see also Section 3.2 "Hierarchy of Planning and Environmental Assessment", Section 4 "Relevant aspects of the current state of the Environment", Section 5 "Strategic Environmental Objectives" and Section 9 "Mitigation Measures").

The Strategy aligns with legislation and documents setting out public policy for land use, transport and climate action and will be incorporated into the review and preparation of these documents.

The Strategy is subject to a number of high-level environmental protection policies and objectives with which it must comply, including those which have been identified as Strategic Environmental Objectives in Section 5. Examples of Environmental Protection Objectives include the aim of the EU Habitats Directive - which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States - and the purpose of the Water Framework Directive - which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving good status.

Section 3 SEA Methodology

3.1 Introduction to the Iterative Approach

Figure 3.1 provides an overview of the integrated Strategy preparation, SEA and AA processes. The preparation of the Strategy, SEA and AA has taken place concurrently and the findings of the SEA and AA have informed the Strategy.

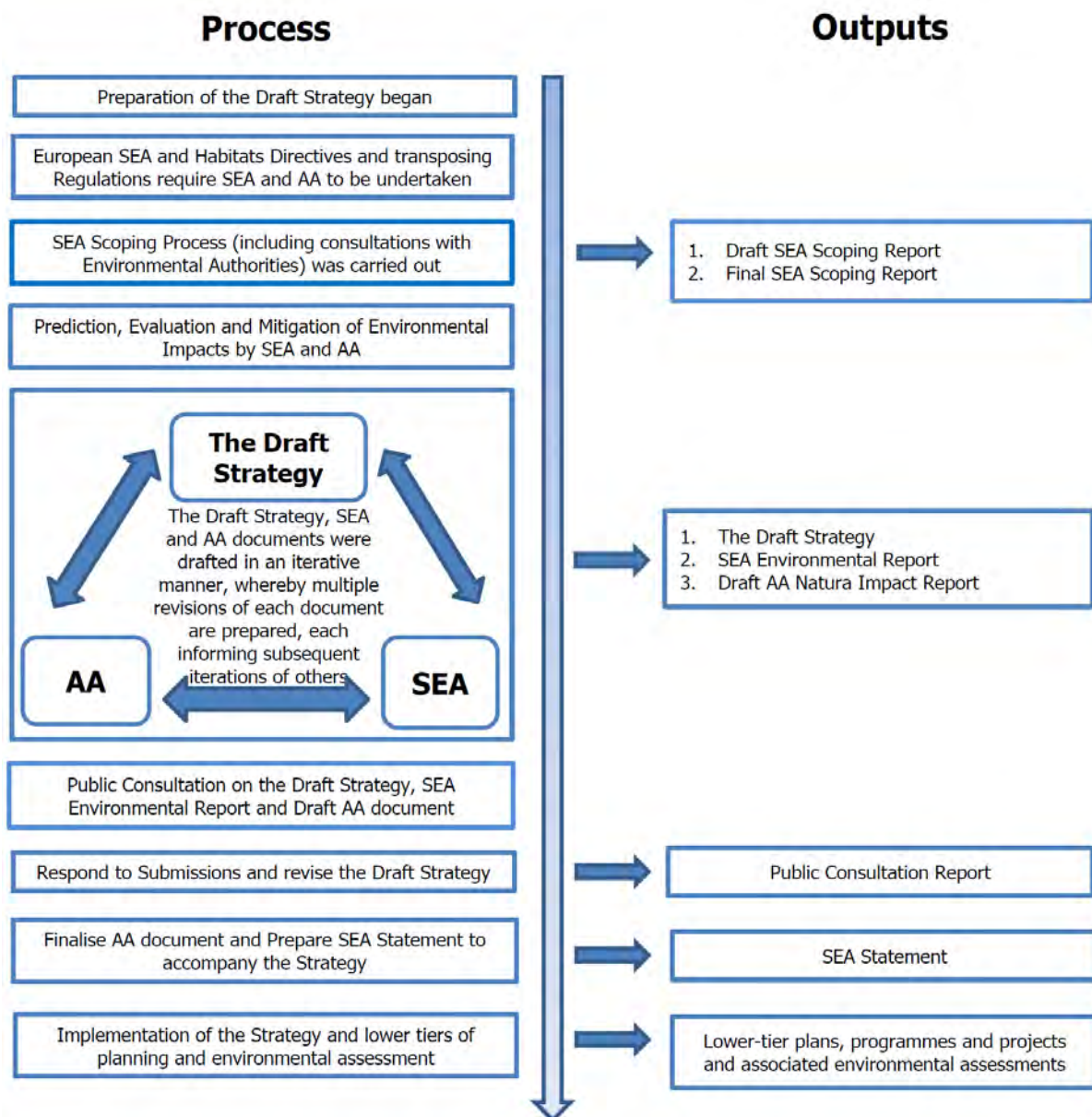


Figure 3.1 Overview of the Strategy, SEA and AA Process

3.2 Hierarchy of Planning and Environmental Assessment

As detailed within Section 2.4 of this SEA Environmental Report and further expanded upon in the Strategy, the Strategy is situated in a hierarchy of documents setting out public policy for land use, transport and climate mitigation. These other existing policies, plans etc. have been subject to their own environmental assessment processes, as relevant, and already provide for various measures that have been compiled into the Strategy. The Strategy aligns with and includes many of the provisions already in force under these documents. Furthermore, the Strategy will be incorporated into the review and preparation of these documents.

Individual transport projects must be consistent and comply with these higher-level documents setting out policy relating to land use and transport and are subject to their own project level EIA and AA requirements as relevant.

3.3 Appropriate Assessment and Integrated Biodiversity Impact Assessment

3.3.1 Appropriate Assessment

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

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The conclusion of the AA is that the Strategy will not affect the integrity of the Natura 2000 network³ of European sites.

The preparation of the Strategy, SEA and AA has taken place concurrently and the findings of the AA have informed both the Strategy and

the SEA. All recommendations made by the AA have been integrated into the Strategy.

3.3.2 Integrated Biodiversity Impact Assessment

Many elements of Integrated Biodiversity Impact Assessment as detailed in the EPA's (2013) Practitioner's Manual have been aligned with in the undertaking of the SEA for the Strategy.

Current State of the Environment

- Biodiversity data sources relevant for this regional level assessment have been identified.
- Designated sites and other habitats and species of ecological value are identified.
- AA information has been incorporated into the SEA.

Alternatives

- Impacts upon biodiversity are considered under each of the alternatives and certain potential conflicts can be mitigated.

Impact assessment

- Effects on biodiversity are identified and assessed and the AA gives consideration to the interrelationship between biodiversity and potential effects on European Sites.

Mitigation and monitoring

- Taking into account all measures contained within the Strategy, all the proposed mitigation measures deriving from the various processes were generally consistent and compatible.
- Indicators and associated targets have been included in SEA for monitoring European Sites.

Reporting

- This SEA ER addresses all biodiversity-related considerations relevant for this level of assessment.
- This SEA ER contains all biodiversity-relevant information, data, figures and maps relevant for this level of assessment.
- This SEA ER has been informed by the AA findings.

Communication and consultation

- Submissions from various environmental authorities have been taken on board.
- The preparation of the Strategy, SEA and AA has taken place concurrently and the findings of the AA have informed both the Strategy and the SEA.

3.4 Scoping

The scope of environmental issues to be dealt with by the SEA together with the level of detail to which they are addressed was decided upon taking into account the level of detail included in the Strategy and submissions from environmental authorities. Scoping allowed the SEA to become focused upon key

³ 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.

issues relevant to the environmental components which are specified under the SEA Directive⁴.

As the Strategy is not likely to have significant effects on the environment in another Member State transboundary consultations as provided for by Article 7 of the SEA Directive were not undertaken.

Relevant environmental authorities⁵ identified under the European Communities (Environmental Assessment of Certain Plans and Programmes), as amended, were sent SEA scoping notices by the National Transport Authority indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Authority. Submissions were made by all environmental authorities consulted with and these have been taken into account in undertaking the assessments and preparing the Strategy.

3.5 Environmental Report

In this SEA Environmental Report, which accompanied the original Draft Strategy on public display and has been updated to take account of recommendations made in submissions and minor modifications⁶ to the Draft Strategy, the likely environmental effects of the Strategy and the alternatives are predicted and their significance evaluated. The Environmental Report provides the Authority, stakeholders and the public with a clear understanding of the likely environmental consequences of implementing the Strategy.

⁴ These components comprise biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

⁵ At the time of scoping, Government Departments had been recently renamed and certain functions were under consideration. The following Departments were notified in order to ensure compliance with the Regulations: Environmental Protection Agency; Department of Environment, Climate and Communications; Department of Agriculture, Food and the Marine, Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media; and Department of Housing, Local Government and Heritage.

⁶ Minor modifications were subject to Screening for SEA and AA and it was determined that, considering the measures that have been already integrated into the Draft Strategy, modifications would not be likely to result in either significant environmental effects or potential effects on any European site.

Mitigation measures to prevent or reduce significant adverse effects posed by the Strategy are identified in Section 9 - these have been integrated into the Strategy.

The Environmental Report contains the information specified in Schedule 2 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No. 435 of 2004), as amended (see Table 3.1).

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

3.6 SEA Statement

On finalisation of the Strategy, an SEA Statement is prepared that includes information on:

- How environmental considerations have been integrated into the Strategy, highlighting the changes to the Strategy which resulted from the SEA process;
- How the SEA Environmental Report and consultations have been taken into account, summarising the key issues raised in consultations and in the Environmental Report indicating what action was taken in response;
- The reasons for choosing the Strategy in the light of other alternatives considered, identifying these alternatives, commenting on their potential effects and explaining why the final Strategy was selected; and
- The measures decided upon to monitor the significant environmental effects of implementing the Strategy.

Table 3.1 Checklist of Information included in this Environmental Report

Information Required to be included in the Environmental Report	Corresponding Section of this Report
(A) Outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes	Sections 2, 5 and 8
(B) Description of relevant aspects of the current state of the environment and the evolution of that environment without implementation of the plan or programme	Section 4
(C) Description of the environmental characteristics of areas likely to be significantly affected	Sections 4, 7 and 8
(D) Identification of any existing environmental problems which are relevant to the plan or programme, particularly those relating to European protected sites	Section 4
(E) List of environmental protection objectives, established at international, EU or National level, which are relevant to the plan or programme and describe how those objectives and any environmental considerations have been taken into account when preparing the Plan	Sections 5, 7, 8, 9 and Appendix I
(F) Describe the likely significant effects on the environment	Sections 7 and 8
(G) Describe any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse environmental effects of implementing the plan or programme	Section 9
(H) Give an outline of the reasons for selecting the alternatives considered, and a description of how the assessment was undertaken (including any difficulties)	Sections 6, 7 and 8
(I) A description of proposed monitoring measures	Section 10
(J) A non-technical summary of the above information	Appendix II
(K) Interrelationships between each environmental topic	Addressed as it arises within each Section

Section 4 Relevant aspects of the current state of the Environment

4.1 Introduction

Reflecting the specifications in the SEA Directive, the relevant aspects of the current state of the environment for the following environmental components are identified in this section:

- Air and Climatic Factors;
- Population and Human Health;
- Biodiversity, Flora and Fauna;
- Material Assets;
- Water;
- Landscape;
- Cultural Heritage;
- Soil; and
- The interrelationship between the above factors.

Information which is relevant to lower tier planning and project development and associated environmental assessments is identified (note that Article 5 of the SEA Directive, in accordance with the established European principle of subsidiarity, requires that the Environmental Report includes the information that may reasonably be required taking into account, inter alia, the extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment).

4.2 National Reporting on the Environment

The EPA's *"Ireland's Environment – An Assessment 2020"* report provides an integrated assessment of the overall quality of Ireland's environment, the pressures being placed on it and the societal responses to current and emerging environmental issues. This report has informed various parts of the environmental baseline provided below. The key environmental challenges or messages identified by the report are:

Environmental Policy Position

A national policy position for Ireland's Environment.

Full implementation

Full implementation of existing

environmental legislation and a review of the governance around the coordination on environmental protection across public bodies.

Health and Wellbeing

Protecting the Environment is an Investment in Our Health and Wellbeing.

Climate

Systemic change is required for Ireland to become the climate-neutral and climate resilient society and economy that it aspires to be.

Air Quality

Adoption of measures to meet the World Health Organization air quality guideline values should be the target to aim for in the Clean Air Strategy.

Nature

Safeguard nature and wild places as a national priority and to leave a legacy for future generations.

Water Quality

Improve the water environment and tackle water pollution locally at a water catchment level.

Marine

Reduce the human-induced pressures on the marine environment.

Clean Energy

Ireland needs to move rapidly away from the extensive use of fossil fuels to the use of clean energy systems.

Environmentally Sustainable Agriculture

An agriculture and food sector that demonstrates validated performance around producing food with a low environmental footprint.

Water Services

Drinking water and wastewater infrastructure must meet the needs of our society.

Circular Economy

Move to a less wasteful and circular economy where the priority is waste prevention, reuse, repair and recycling.

Land Use

Promote integrated land-mapping approaches to support decision-making on sustainable land use.

The report highlights that high-quality green and blue spaces are not just for nature but are for peoples' health and wellbeing, particularly in the context of an increasingly urban society and increasing settlement densities.

Chapter 11 of the State of the Environment Report focuses on environmental pressures from transport, understanding the drivers for these pressures and looking at the transformation towards sustainable mobility within the sector. These pressures have been taken into account in undertaking the assessments and preparing the Strategy.

4.3 Sustainable Development Goals

Implementation of the Plan will contribute towards efforts to achieve a number of the 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development, which were adopted by world leaders in 2015 at a United Nations Summit and came into force in 2016. These Goals include:

- Goal 3. Ensure healthy lives and promote well-being for all at all ages.
- Goal 6. Ensure availability and sustainable management of water and sanitation for all.
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all.
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12. Ensure sustainable consumption and production patterns.
- Goal 13. Take urgent action to combat climate change and its impacts.
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

4.4 Likely Evolution of the Environment in the Absence of the Strategy

The implementation of the Strategy is likely to give rise to the following residual adverse environmental effects:

- An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Strategy, including those relating to sustainable mobility.
- Loss of an extent of non-protected habitats as a result of new or widened transport infrastructure that involves the replacement of semi-natural land covers with artificial surfaces

- Losses or damage to ecology (these would be in compliance with relevant legislation).
- Residual wastes (these would be disposed of in line with higher level waste management policies).
- Potential residual losses to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure.
- Flood related risks remain due to uncertainty with regard to extreme weather events.
- Residual visual effects (these would be in compliance with landscape designation provisions).
- Potential alteration to the context and setting of designated cultural heritage however these will occur in compliance with legislation. Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Strategy.
- Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces and from sea level rise/coastal/estuarine erosion.

In the absence of the Strategy, none of the adverse effects detailed above would result as a result of the Strategy; however, lower-tier Plans would continue to be reviewed and implemented and applications for permission for new projects would continue to be made. Compliance with the mitigation measures outlined under Section 9 of this report would be necessary in order to help ensure that the following significant adverse environmental effects do not occur:

- Arising from both construction and operation of transport infrastructure and services and associated facilities/ infrastructure: loss of/damage to biodiversity in designated sites, 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.
- Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species and/or coastal squeeze.
- Effects in riparian zones where new crossings of waters are progressed.
- Potential effects on vegetation from transport emissions.
- Generation of construction waste.
- Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure.
- Adverse impacts upon the status of water bodies and entries to the WFD Register of Protected Areas, arising from changes in quality, flow and/or morphology.
- Increase in the risk of flooding.
- Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape.
- Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities, including as a result of increasing traffic flows.
- Adverse impacts on the hydrogeological and ecological function of the soil resource as a

result of construction of transport and associated transport facilities/infrastructure.

- Adverse impacts on features or areas of geological/geomorphological interest as a result of construction of transport and associated transport facilities/infrastructure.
- Potential for increase in coastal/river bank erosion.

In the absence of the Strategy, it is uncertain as to whether the investment proposed (including that relating to public transport, walking and cycling developments) would be made and it is uncertain as to which projects would be progressed or prioritised. Lower-tier plans and projects would be less coordinated. It is uncertain as to whether the following positive effects (that would be facilitated by implementation of the Strategy) would be achieved:

- Contributions towards reductions in greenhouse gas and other emissions to air and associated achievement of legally binding targets (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of: facilitating a shift from car to more sustainable and non-motorised transport modes; and facilitating more consolidated urban areas and reductions in sprawl.
- Contributions towards reductions in consumption from non-renewables and associated achievement of legally binding renewable energy targets, including sectoral targets for transport (in combination with plans and programmes from all sectors, including energy, transport and land use planning).
- Contributions towards managing traffic flows (and associated management of adverse effects as a result of traffic on air quality and noise levels).
- Provides for the development of transport infrastructure and services in locations which will facilitate use by those living and working in urban/suburban areas.
- Facilitates contribution towards the protection of human health as a result of contributing towards the protection of environmental vectors, especially air.
- Facilitates lower overall effects on ecology (including designated sites, ecological connectivity and habitats) – due to increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites.
- Contributes towards the protection of vegetation as a result of contributing towards the protection of environmental vectors, especially air.
- Potential ecological enhancement interventions along transport corridors.
- Contributions towards energy security (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of reducing traffic flows and associated energy use.
- Contributions towards a mode shift away from the private car to public transport, walking and cycling and associated enhancement of the public realm.

- Contributions towards the protection of built/amenity assets and infrastructure.
- Contributions towards the reuse and regeneration of brownfield lands thereby contributing towards a higher efficiency of land utilisation, sustainable mobility and a reduction in the need to develop greenfield lands. By facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites there will be lower adverse effects upon ecology, landscape designations, architectural and archaeological heritage and soil.
- Contributions towards appropriate waste management.
- Contributions towards lower effects on ground and surface waters due to higher levels of development within established and serviced settlement centres that have installed/upgraded water services capable of delivering Water Framework Directive targets.
- Contributions towards compliance with the Flood Risk Management Guidelines.
- Contributions towards the protection of landscape designations as a result of facilitating compliance with relevant plans.
- Contributions towards the protection of cultural heritage (archaeological and architectural) as a result of facilitating compliance with relevant legislation.
- Contributions towards the enhancement of cultural heritage and its context in urban areas and their surrounds as a result of replacing motorised modes with more sustainable and non-motorised modes of transport such as walking and cycling.
- Minimises land-take and loss of extent of soil resource – as a result of facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites.
- Contributions towards the protection of the environment from contamination arising from brownfield development.
- Contributions towards the protection of features or areas of geological/geomorphological interest.

4.5 Air and Climatic Factors

4.5.1 Overview

The Strategy facilitates a mode shift away from the private car to public transport, walking and cycling and associated positive effects, including those relating to:

- Contributions towards reductions in greenhouse gas emissions and associated achievement of legally binding targets – directly and as a result of facilitating development within urban and suburban areas;
- Contributions towards reductions in consumption of non-renewable energy sources and achievement of legally binding renewable energy targets;
- Energy security; and
- Contributions towards reductions in emissions to air (including noise) and associated achievement of air quality objectives, thereby contributing towards improvement of air quality and protection of human health.

4.5.2 Greenhouse Gas Emissions

The key issue involving the assessment of the effects of implementing the Strategy on climatic factors relates to greenhouse gas emissions arising from transport.

The EPA 2022 publication *Ireland's Greenhouse Gas Emission Projections 2021-2040* provides an assessment of Ireland's total projected greenhouse gas emissions from 2021 to 2040, updated using the latest Inventory data for 2020. The report provides an assessment of Ireland's progress towards achieving its national ambitions under the Climate Action and Low Carbon Development (Amendment) Act 2021 and EU emission reduction targets for 2030 as set out under the Effort Sharing Regulation⁷. Key findings identified as part of the report are that:

- Urgent implementation of all climate plans and policies, plus further new measures, are needed for Ireland to meet the 51 per cent emissions reduction target and put Ireland on track for climate neutrality by 2050.
- Ireland can meet its non-ETS EU targets of a 30 per cent emission reduction by 2030 (compared to 2005) assuming implementation of planned policies and measures and the use of the flexibilities available. These include a land use

flexibility using the Climate Action Plan 2021 afforestation rate of 8,000 hectares per annum.

- The gap between the 'Existing Measures' and 'Additional Measures' scenarios in these projections highlights that the current pace of implementation will not achieve the change required to meet the Climate Act targets. Faster implementation of 'Additional Measures' is needed to close this gap.
- Carbon budgets proposed by the Climate Change Advisory Council have recently been approved by the Oireachtas for the periods 2021-25, 2026-30 and 2031-35. The Projections highlight that there is currently a significant gap between the budgets and the projected emissions over the budget periods. This gap will need to be addressed very quickly if Ireland is to stay within the Carbon Budgets.
- Under the Additional Measures scenario, renewable energy is projected to increase to 78 per cent of electricity generation by 2030 with emissions from the Energy Industry decreasing by 10 per cent per annum from 2021-30. Increased coal use from 2021 and growing energy demand, including from data centres, threaten to negatively impact achievement of National targets, particularly for the first carbon budget period.
- Under the Existing Measures scenario emissions are projected to increase by 1.9 per cent over the 2020-2030 period. A methane emissions reduction of almost 30 per cent is required to achieve a 22 per cent reduction in agriculture emissions compared to 2018, as committed to in the 2021 Climate Action Plan. The sector must clearly set out how this will be achieved to address uncertainty regarding its ability to deliver even the lower end of the range of its sectoral targets within the ever-shortening timeframe to 2030.
- The end of COVID travel restrictions is projected to result in transport emissions increasing by 18-19 per cent from 2020 to 2022. Emissions from the sector are projected to reduce to 39 per cent below 2018 levels by 2030 and achieve a 31.7 per cent renewable transport share if the additional measures in plans and policies are implemented, this includes over 940,000 electric vehicles on the road by 2030, increased biofuel blend rates and measures to support more sustainable transport.
- Spending more time at home due to hybrid working and the increasing cost of fossil fuels highlights the need for our houses to become far more efficient. Implementing currently planned measures for the installation of 680,000 heat-pumps by 2030 as well as retrofitting 500,000 homes is projected to achieve a 41.5 per cent reduction in residential emissions in 2030 (compared to 2018).

The revised National Climate Action Plan 2021 provides a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and setting us on a path to reach net-zero emissions by no later than 2050, as committed to in the Programme for Government and set out in the Climate Act 2021. The Plan lists the actions needed to deliver on Ireland's climate targets

⁷ Regulation (EU) 2018/842 of on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement.

and sets indicative ranges of emissions reductions for each sector of the economy. It will be updated annually, including in 2022, to ensure alignment with Ireland's legally binding economy-wide carbon budgets and sectoral ceilings.

The National Adaptation Framework (Department of Communications, Climate Action and Environment, 2018), sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The National Adaptation Framework outlines a whole of government and society approach to climate adaptation. Under the Framework, 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 statutory Climate Change Adaptation Plan for the Transport Sector was prepared under the Climate Action and Low Carbon Development Act (2015) and the National Adaptation Framework (2018) and published by the Department of Transport in 2019. The Adaptation Plan sets out the national strategy to reduce Ireland's vulnerability to the negative effects of climate change and to avail of any positive impacts, with an objective to help develop resilience within the sector in order to safeguard transport infrastructure from future climate impacts.

4.5.3 Alternative Fuels and Renewable Electricity Generation Targets

The use of alternative fuels, including electricity, forms a significant part of government policy to reduce transport emissions. The Strategy facilitates a mode shift away from the private car to public transport, walking and cycling and provisions relating to electric vehicles. This will contribute towards reductions in the consumption of non-renewable energy sources and achievement of legally binding renewable energy targets.

The Renewable Energy Directive (Directive 2009/28/EC) requires each Member State to adopt a national renewable energy action plan (NREAP) to set out Member States' national targets for the share of energy from renewable sources consumed in transport, electricity and heating in 2020 that will ensure delivery of the overall renewable energy target. These sectoral targets are referred to

as RES-E (electricity), RES-T (transport) and RES-H (heat).

The overall target for Ireland in Directive 2009/28/EC was 16% share of renewable energy in Gross Final Consumption (GFC) by 2020. Under the Directive (2009/28/EC), Ireland was obliged to deliver 10% of transport energy by renewable sources by 2020⁸. SEAI's 2021 publication "*Energy in Ireland 2021*" report includes the most recent assessment of Ireland's progress towards renewable energy targets up to 2020 and identifies that Ireland:

- Did not meet its EU 2020 overall renewable energy target. The overall share of renewable energy was 13.5%, compared to the target of 16%;
- Succeeded against its EU 2020 renewable energy target for transport (10.2% vs. 10%), and just missed its renewable energy target for electricity (39.1% vs. 40%);
- Achieved just half its 2020 renewable energy target for heating and cooling (6.3% vs. 12%); and
- Energy from renewable sources grew by 8.9% in 2020.

4.5.4 Energy Security

Greater use of alternative fuels, including renewable energy, has the potential to further contribute towards energy security.

Indigenous production accounted for 32% of Ireland's energy requirements in 1990. However, since the mid-1990s import dependency had grown significantly, due to the increase in energy use together with the decline in indigenous natural gas production at Kinsale since 1995 and decreasing peat production. Ireland's overall import dependency reached 90% in 2006. It varied between 85% and 90% until 2016 when it fell to 69%. This trend reflects the fact that Ireland is not endowed with significant indigenous fossil fuel resources and has only in recent years begun to harness significant quantities of renewable resources and more recently natural gas from the Corrib field.

4.5.5 Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air

⁸ Department of Communications, Climate Action and Environment (2017) National Renewable Energy Action Plan Fourth Progress Report submitted under Article 22 of Directive 2009/28/EC.

quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

The principles to this European approach are set out in the Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) (which replaces the earlier Air Quality Framework Directive 1996 and the first, second and third *Daughter Directives*; the fourth *Daughter Directive* will be included in CAFE at a later stage).

In order to comply with the Directives mentioned above, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002).

The EPA's (2021) *Air Quality in Ireland 2020* identifies that:

- Air quality in Ireland is generally good however there are localised issues.
- Ireland was above the European Environment Agency reference level for polycyclic aromatic hydrocarbons (PAHs), a toxic chemical, at 4 monitoring sites due to the burning of solid fuel.
- Ireland was above World Health Organization (WHO) air quality guidelines for particulate matter (PM), sulphur dioxide (SO₂) and ozone at 52 monitoring sites across the country.
- The travel restrictions imposed as a result of Covid-19 had a positive impact on air pollution in Ireland's urban areas with up to 50% reductions in traffic pollution.
- Levels of nitrogen dioxide (NO₂) from transport emissions fell in 2020, however, if long-term changes are not made to modes or patterns of transport it will lead to future exceedances in the urban areas.

Air pollution from transport is dominated by NO_x emissions. Of these, NO₂ is particularly impactful from a health perspective. The report describes that concentrations of NO₂ at urban areas in Ireland are close to the EU annual limit value. The potential implications for air quality with increases in traffic numbers or from certain weather conditions unfavourable to dispersion of pollutants could result in exceedances of the EU limit value. The report states that:

- "Short-term exposure to NO₂ is linked to adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in asthmatics.
- Long-term exposure is associated with increased risk of respiratory infection in children. NO_x is a major precursor in the formation of ground level ozone. It is also a major precursor in the formation of photochemical 'smog'."

With regards to solutions, the report identifies possible actions that could help improve and maintain local air quality:

- To tackle the problem of particulate matter:
 - Move away from domestic burning of solid fuel (coal, wood, peat) towards cleaner ways of heating homes such as heat-pump technology.
 - Implement the Government's proposed nationwide smoky fuel ban in 2022 which will facilitate people to make clean air choices.
- To reduce the impact of NO₂:
 - Implement the transport options (clean public transport and increasing the use of electric vehicles) as identified in the Government's Climate Action Plan.
 - Avoid reverting to pre-COVID traffic levels, maintain pedestrianisation of our urban areas and continue to improve cycling infrastructure.

The Strategy facilitates improvements in sustainable mobility, thereby facilitating reductions in and limiting increases of emissions to air. Such emissions would occur otherwise with higher levels of motorised transport and associated traffic.

4.5.6 Noise

Noise is unwanted sound. The Noise Directive - Directive 2002/49/EC relating to the assessment and management of environmental noise - is part of an EU strategy setting out to reduce the number of people affected by noise in the longer term and to provide a framework for developing existing EU policy on noise reduction from source. The Directive requires competent authorities in Member States to:

- Draw up *strategic noise maps* for major roads, railways, airports and agglomerations, using harmonised noise indicators⁹ and use these maps to assess the number of people which may be impacted upon as a result of excessive noise levels;

⁹ L_{den} (day-evening-night equivalent level) and L_{night} (night equivalent level)

- Draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good; and,
- Inform and consult the public about noise exposure, its effects, and the measures considered to address noise.

In compliance with the Directive and transposing Environmental Noise Regulations (S.I. No. 140 of 2006), Noise Action Plans have been prepared for each local authority area within the country. The Waterford city and County Noise Action Plan 2019-2023 is currently in force within the Strategy area.

Noise Action Plans act as a means of managing environmental noise, and meeting the aim of the Regulations of preventing, and reducing where necessary, environmental noise. One of the key inputs into Noise Action Plans is the development of strategic noise maps. Noise maps identify and prioritise cluster areas which will require further assessment and may require mitigation measures to be put in place. Roads and rail lines are the dominant noise sources within the Strategy area.

Noise mapping, in the form of noise contours for the L_{den}^{10} , from the EPA's third round of strategic noise mapping is provided on Figure 4.1 for the following sources within the Strategy area (as specified by the Environmental Noise Regulations, 2018):

- Roads exceeding the flow threshold of 3 million passages per year for the Waterford agglomeration; and
- Rail exceeding the flow threshold of 30,000 vehicle passages per year.

Noise mapping is also provided outside of the Strategy area (as specified by the Environmental Noise Regulations 2018) for major roads.

4.5.7 Existing Problems

The Climate Change Advisory Council's *Annual Review 2021* identified that when considering national policy goals to 2050, Ireland is presently significantly off-track from paths that deliver long-term transition towards climate neutrality on that timescale. The Council also noted that:

- Transport trends are not consistent with a sustainable low-carbon path, making emissions reductions more difficult, while also driving congestion and a host of sustainability problems and costs; and
- It is necessary to accelerate electrification while putting an urgent priority on long-term integrated spatial and mobility planning in Ireland, if a transformational sustainable path is to be delivered.

Air quality and noise present challenges, especially in urban areas, as detailed under the relevant sub-sections above. With regard to air quality, air pollution from transport is dominated by NO_x emissions. Of these, NO_2 is particularly impactful from a health perspective. The Strategy will help to facilitate reductions in emissions and a transition from dependence on fossil fuel combustion powered transport.

¹⁰ Day-evening-night level. It is a descriptor of noise level based on energy equivalent noise level (L_{eq}) over a whole day with a penalty of 10 dB(A) for night time noise (23.00-7.00) and an additional penalty of 5 dB(A) for evening noise (i.e. 19.00-23.00).

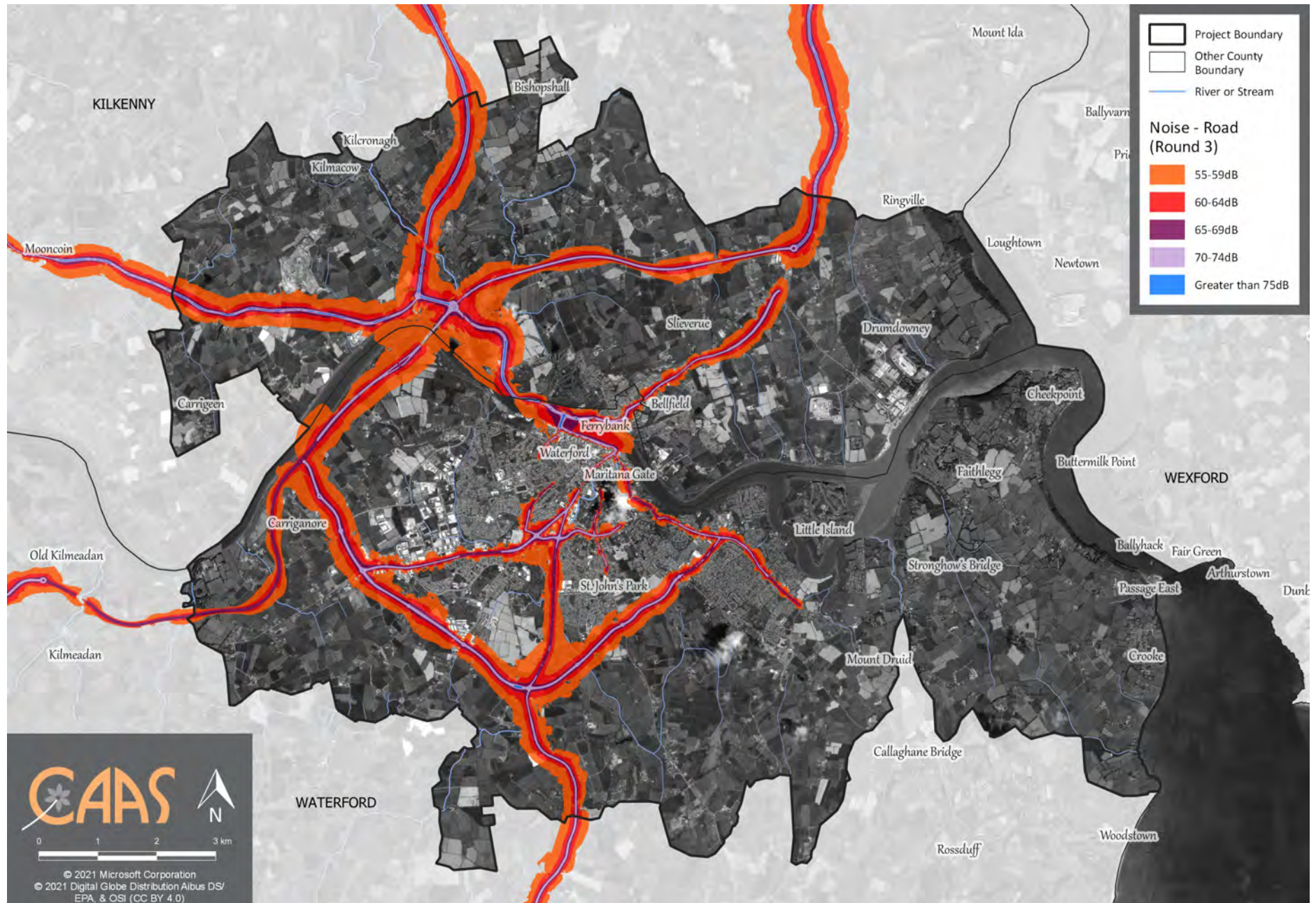


Figure 4.1 Noise Mapping L_{den} (day-evening-night composite noise indicator)

4.6 Population and Human Health

4.6.1 Population

The Strategy area covers Waterford - the largest urban centre in the south-east and the State's fifth largest city. Waterford Metropolitan Area¹¹ is identified by Southern Regional Assembly Regional Spatial and Economic Strategy (RSES) as the principal urban centre of the South-East and a Regional City of Scale. In 2016 the total population of Waterford Metropolitan Area (the total area of the Waterford City, including suburbs within Counties Waterford and Kilkenny) was identified as being of 59,854 persons¹². Most users of transport within the Strategy area reside in and commute to and from urban/suburban areas.

There are approximately 197,000 trips originating within the WMA on average each weekday (over 24 hours). Most of the travel demand is internal for Waterford City and suburbs, with 70% respectively of morning peak trips having both their origins and destinations in this area respectively. Almost 12,000 of the trips originating from the other Metropolitan Areas have their destination in Waterford City and suburbs. Waterford City is the destination for 71% of trips originating in the South-East as a whole. The current limitations of public transport provision in the WMA are reflected in the low mode share for sustainable travel modes. The overall WMA mode share for the 24-hour demand is as follows: 69% by car; 25% walking; 4% by public transport; and 2% cycling.¹³

Figure 4.2 shows population density per Electoral Division. The most populous divisions are generally concentrated within and surrounding the city centre, while the adjacent hinterland areas are among the least populous divisions. Locating transport infrastructure and services closer to urban/suburban areas (which have higher populations and densities) will allow for a greater number journeys via sustainable transport modes and associated

positive environmental effects on energy usage, air and noise emissions.

4.6.2 Human Health

With regard to human health, impacts relevant to the SEA are those which arise as a result of interactions with 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 e.g. interactions with human health that could occur in urban locations that experience high levels of traffic congestion and associated particulate matter and noise emissions to air.

Emission limits for discharges to air, soil and water are set with regards to internationally recognised exposure limit values. These are generally set to be many times the safe exposure limit - in order to provide protection. In the event that a plan or programme began to have adverse health effects on surrounding populations it is likely that it would have been identified as being in breach of such emission standards at a very early stage - and long before the manifestation of any adverse health effects in the population.

4.6.3 Seveso (COMAH) Sites

These are defined as industrial sites that, because of the presence of dangerous substances in sufficient quantities. Seveso Sites are defined as industrial sites that, because of the presence of dangerous substances in sufficient quantities, are regulated under the European Seveso-III Directive (2012/18/EU).

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident.

The Seveso III Directive is transposed through the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015). The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and

¹¹ Large urban area accessible with national and international connectivity, strong business core, innovation, education, retail, health and cultural role.

¹² Waterford City and County Development Plan 2022-2028

¹³ WMATS

to seek to limit as far as possible the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner. The intention is to achieve this through tiered controls on the operators of the establishments subject to the regulations - the larger the quantities of dangerous substances present at an establishment, the more onerous the duties on the operator (defined and listed as lower and upper tier sites).

urban streams. Flooding in certain circumstances could pose a risk to human health.

There is currently¹⁴ one Lower Tier Seveso Establishment (Staffords Wholesale Ltd. - Lockheed Avenue, Airport Business Park, Waterford) and one Upper Tier Seveso Establishment (Trans-Stock Warehousing and Cold Storage Ltd. - Christendom, Ferrybank, Waterford) located within the Strategy area.

4.6.4 Soil

In the absence of mitigation, contaminated materials have the potential to adversely impact upon human health, water quality and habitats and species.

As is the case with other historically developed areas across the country, there is potential for contamination at local sites within the Strategy area, especially where land uses occurred in the past in the absence of the high standards of today's environmental protection legislation.

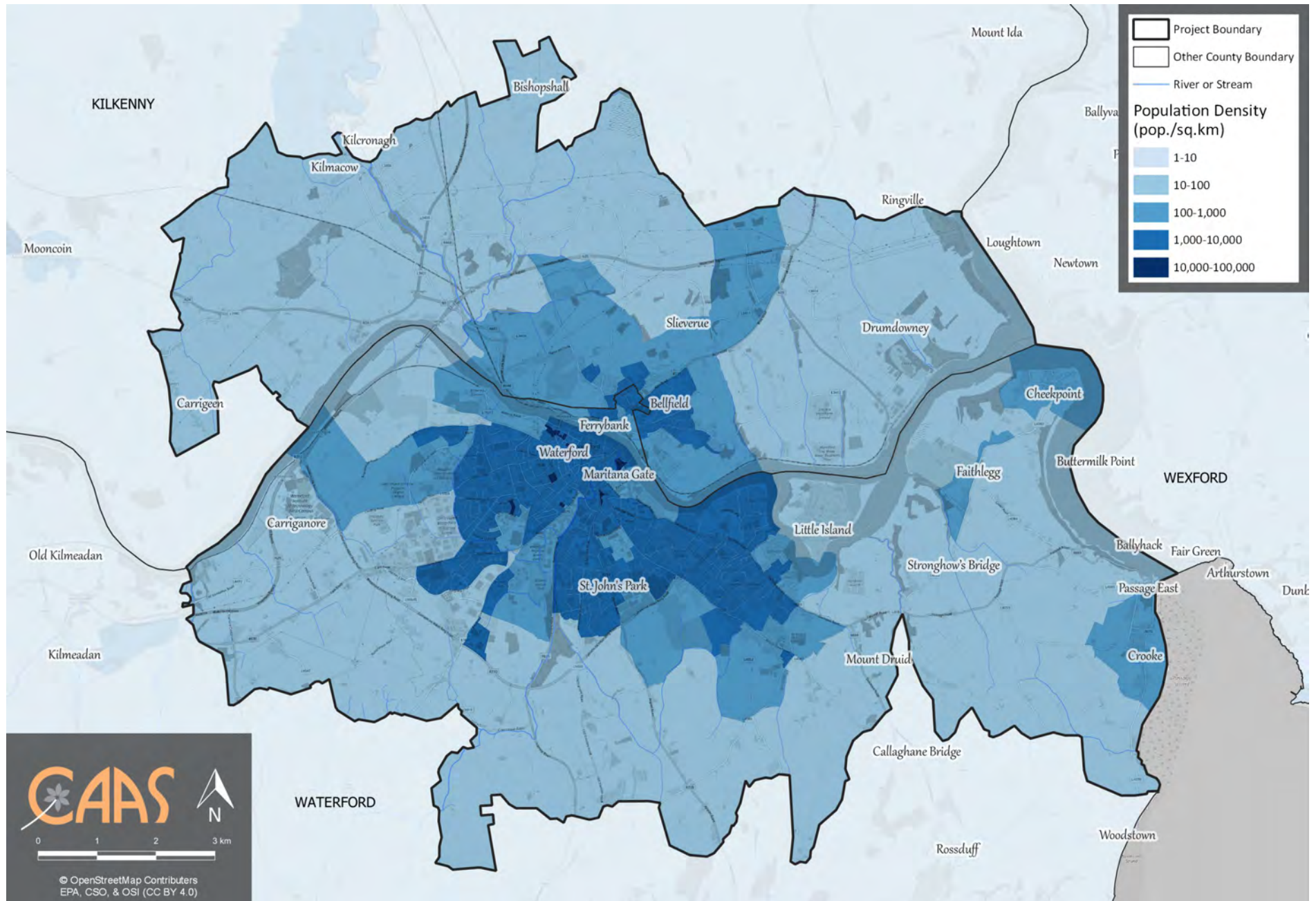
4.6.5 Existing Problems

Transport issues that present potential interactions with human health include emissions to air including noise and other emissions. These issues are identified under the relevant environmental component and potential interactions have been taken into account by the provisions contained within the Strategy.

There is historic and predictive evidence of flooding within the area (see Section 4.10.9).

Parts of the Strategy area are very vulnerable to adverse effects from small changes in sea level combined with changes in the occurrence of severe rainfall events and associated flooding of rivers and a number of smaller

¹⁴ HSA; Notified Seveso Establishments for Lower Tier (18 November 2021) and Upper Tier (22 December 2020). https://www.hsa.ie/eng/Your_Industry/Chemicals/Legislation/Enforcement/COMAH/List_of_Establishments/



CAAS for the National Transport Authority

4.7 Biodiversity and Flora and Fauna

4.7.1 Overview

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

The most ecologically sensitive, designated and protected areas within the Strategy area comprise the Lower River Suir and the River Barrow and their tributaries and estuary. These surface waters provide habitats for sensitive species. Dispersed areas of marginal agricultural lands that may include ecological sensitivities occur throughout the WMA.

Ecological designations include:

- Special Areas of Conservation (SACs)¹⁵;
- Special Protection Areas (SPAs)¹⁶;
- Proposed Natural Heritage Areas (pNHAs)¹⁷;
- Certain entries to the Water Framework Directive Register of Protected Areas, including Shellfish Waters and Salmonid Waters¹⁸;
- Freshwater Pearl Mussel catchments¹⁹;
- Wildfowl Sanctuaries²⁰; and
- Tree Preservation Orders (TPOs)²¹.

Protected Species include:

- Annex IV (Habitats Directive) species of flora and fauna, and their key habitats (i.e. breeding sites and resting places), which are strictly protected wherever they occur, whether inside or outside the above sites, e.g. Otter and bats;

- Other species of flora and fauna and their key habitats which are protected under the Wildlife Acts, 1976-2000, wherever they occur; and
- 'Protected species and natural habitats' as defined in the European Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including: Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur) and Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur).

The following information is relevant to ecological networks and connectivity and non-designated habitats:

- CORINE land cover mapping (including areas likely to contain a habitat listed in Annex 1 of the Habitats Directive)²²;
- Watercourses, wetlands and peatlands;
- Other relevant County Development Plan designations;
- The EPA's Framework National Ecological Network for Ireland²³; and
- Other sites of high biodiversity value or ecological importance as identified by, for example, the Department of Agriculture, Food and the Marine (badger sets), relevant datasets from the National Biodiversity Data Centre and BirdWatch Ireland's 'Important Bird Areas' (Crowe et al., 2009).

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping stones for wildlife species moving within their normal range. They are important for the migration, dispersal and genetic exchange of species of flora and fauna particularly for mammals, especially for bats and small birds and facilitate linkages both between and within designated ecological

¹⁵ For more detail refer to Section 4.7.2.1. Sites relevant to the Strategy area are mapped on Figure 4.3 and Figure 4.4.

¹⁶ For more detail refer to Section 4.7.2.1. Sites relevant to the Strategy area are mapped on Figure 4.3 and Figure 4.4.

¹⁷ For more detail refer to Section 4.7.2.2. Sites relevant to the Strategy area are mapped on Figure 4.5.

¹⁸ For more detail refer to Section 4.7.2.3 and Section 4.10.7.

¹⁹ For more detail refer to Section 4.7.2.4.

²⁰ River Blackwater Wildfowl Sanctuary (WFS-51) is within, partially within or adjacent to the Strategy area. For more information refer to <https://www.npws.ie/protected-sites/wildfowl-sanctuaries>.

²¹ TPOs are a planning mechanism whereby individual trees or groups of trees can be identified as important and protected by a TPO. For more detail refer to the local authority.

²² The CORINE land cover mapping classifies land cover under various headings. This dataset allows for the identification of lands that are likely to be most valuable to biodiversity including those which are likely to contain a habitat listed in Annex 1 of the Habitats Directive e.g. natural grasslands, peat bogs, salt marshes. CORINE Land Cover (CLC) is a map of the European environmental landscape based on interpretation of satellite images. Land cover is the observed physical cover, as seen from the ground or through remote sensing, including for example natural or planted vegetation, water and human constructions which cover the earth's surface.

²³ The EPA's Framework National Ecological Network provides a classification of the relative importance of areas by virtue of the biodiversity and flora that they contain and the connectivity they provide. Many of the areas identified are corridors.

sites, the non-designated surrounding countryside and urban areas.

Article 10 of the Habitats Directive recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. The Directive requires that ecological connectivity and areas of ecological value outside the Natura 2000 network of designated ecological sites are maintained.

Man-made habitats within the Strategy area can also include important biodiversity features. Gardens provide habitats for a range of wildlife including various bird species, invertebrates such as bees and butterflies and mammals such as hedgehogs, mice, rats and foxes. These species move around between gardens using hedgerows and vegetated areas. These urban green spaces are of importance as they form part of a network of green spaces across the Strategy area including gardens, parks, graveyards, amenity walks, old railway lines and patches of woodland and scrub within which animals and plants continue to thrive.

Ecological islands or areas of habitat that are not connected to surrounding ecologically valuable habitats can also be important.

4.7.2 Further Detail

4.7.2.1 European Sites

Additional information on European sites is provided in the AA Natura Impact Report which accompanies the Strategy and this Environmental Report on public display.

The SEA uses the same zone of influence cited in the AA; a 15 km buffer around the Strategy area. There are nine European sites (six SACs and three SPAs) designated within this zone (shown on Figure 4.3). Sites within this zone comprise:

- Lower River Suir SAC (Site code: 002137)²⁴;
- River Barrow and River Nore SAC (Site code: 002162)²⁵;

²⁴ Sensitive features include: Atlantic and Mediterranean salt meadows; floating river vegetation; *hydrophilous* tall herb communities; old oak woodlands; alluvial forests; yew woodlands; freshwater pearl mussel; white-clawed crayfish; twaite shad; Atlantic salmon; otter; and various species of lamprey.

²⁵ Sensitive features include: estuaries; reefs; tidal mudflats and sandflats; *salicornia* mud; Atlantic and

- Tramore Dunes and Backstrand SAC (Site code: 000671)²⁶;
- Bannow Bay SAC (Site code: 000697)²⁷;
- Hook Head SAC (Site code: 000764)²⁸;
- Hugginstown Fen SAC (Site code: 000404)²⁹;
- Bannow Bay SPA (Site code: 004033)³⁰;
- Mid-Waterford Coast SPA (Site code: 004193)³¹; and
- Tramore Back Strand SPA (Site code: 004027)³².

Two of these European sites (shown on Figure 4.4), the Lower River Suir SAC and the River Barrow and River Nore SAC, are partially within the Strategy area.

4.7.2.2 Proposed Natural Heritage Areas and Areas Likely to Contain Annex I Habitats

Proposed NHAs (pNHAs) were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000.

Mediterranean salt meadows; floating river vegetation; *hydrophilous* tall herb communities; dry heat; petrifying springs; old oak woodlands; alluvial forests; freshwater and Nore freshwater pearl mussel; otter; twaite shad; Killarney fern; white-clawed crayfish; Desmoulin's whorl snail; various species of lamprey; and Atlantic salmon.

²⁶ Sensitive features include: Tidal mudflats and sandflats; annual vegetation of drift lines; perennial vegetation of stony banks; *salicornia* mud; Atlantic and Mediterranean salt meadows; marram dunes; fixed dunes; and embryonic shifting dunes.

²⁷ Sensitive features include: estuaries; tidal mudflats and sandflats; annual vegetation of drift lines; perennial vegetation of stony banks; *salicornia* mud; Atlantic and Mediterranean salt meadows; halophilous scrub; marram dunes; fixed dunes; and embryonic shifting dunes.

²⁸ Sensitive features include: large shallow inlets and bays; reefs; and vegetated sea cliffs.

²⁹ Sensitive features include: alkaline fens.

³⁰ Sensitive features include: light-bellied brent goose; shelduck; pintail; oystercatcher; golden plover; grey plover; lapwing; knot; dunlin; blacktailed godwit; bar-tailed godwit; curlew; and redshank.

³¹ Sensitive features include: chough; peregrine; cormorant; and herring gull.

³² Sensitive features include: light-bellied brent goose; golden plover; grey plover; lapwing; dunlin; black-tailed godwit; bar-tailed godwit; and curlew.

There are no NHAs designated within or adjacent to the Strategy area, however there are seven pNHAs designated within, partially within or adjacent to the Strategy area (shown on Figure 4.5 and Figure 4.6) comprising:

- Lough Cullin pNHA (Site code: 000406);
- Ballyhack pNHA (Site code: 000695);
- Barrow River Estuary pNHA (Site code: 000698);
- Waterford Harbour pNHA (Site code: 000787);
- Grannyyferry pNHA (Site code: 000833);
- Kilbarry Bog pNHA (Site code: 001700); and
- King's Channel pNHA (Site code: 001702).

Other designations also considered in the assessment and mapped on Figure 4.5 include Nature Reserves³³ and Ramsar Sites³⁴ within 15 km of the Strategy area and beyond, none of which are found within the Strategy area.

Areas likely to contain Annex I Habitats (mapped on Figure 4.7) comprise selected CORINE landcover mapping entries which are indicative of these areas: broad-leaved forest, peat bog, natural grassland, water bodies, coastal lagoons, mixed forests, moors and heaths, intertidal flats, beaches dunes sand, inland marshes, stream courses, estuaries, sparsely vegetated areas, burnt areas, salt marshes, bare rocks, transitional woodland scrub and land principally occupied by agriculture with areas of natural vegetation.

4.7.2.3 Register of Protected Areas

In response to the requirements of the Water Framework Directive a number of water bodies or parts of water bodies that must have extra controls on their quality by virtue of how their waters are used by people and by wildlife have been listed on Registers of Protected Areas (RPAs). Water bodies designated on these lists include:

- Salmonid Waters³⁵ – ground waterbodies intersecting salmonid waters of the River Nore,

within an area adjacent to the north-east of the Strategy area at Ringville, shown on Figure 4.8; and

- Shellfish waters³⁶ – transitional waters and intersecting surface and groundwaters at Waterford Harbour (Cheekpoint/Arthurstown/Creadan), shown on Figure 4.9.

RPAs relating to Nutrient Sensitive Waters, Bathing Waters and water bodies used for Drinking Water are addressed under Section 4.10 "Water".

There are also a number of water dependent habitats within the Strategy area, which have been listed on RPAs – these relate to designated SACs and SPAs.

4.7.2.4 Margaritifera Sensitive Areas

Freshwater pearl mussel is a globally threatened, long-lived and extremely sensitive species that can be impacted by many forms of pollution, particularly sediment and nutrient pollution and by hydrological and morphological changes, which may arise from developments, activities or changes in any part of the catchment. There are two species of freshwater pearl mussel in Ireland (*Margaritifera margaritifera* and *Margaritifera durrovensis*³⁷) and both are protected under Annex II and Annex V of the EU Habitats Directive. Within the Strategy area the Margaritifera Sensitive Areas (Figure 4.10) are found within the Suir river catchment (type: *Catchments with previous records of Margaritifera, but current status unknown*).

The protected areas for Salmonid species are comprised of the 34 Salmonid rivers, tributaries and lakes listed in the Salmonid Regulations (S.I. 293/1988). These Regulations also prescribe quality standards for salmonid waters, the sampling programmes and the methods of analysis and inspection to be used by local authorities to determine compliance with the standards. The Salmonid Regulations designate the "waters capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*)" as protected.

³⁶ In order to protect existing shellfish waters and to ensure the future protection of these areas, the European Union introduced the Shellfish Waters Directive (2006/113/EC). The purpose of this Directive is to put in place concrete measures to protect waters, including shellfish waters, against pollution and to safeguard certain shellfish populations from various harmful consequences, resulting from the discharge of pollutant substances into the sea. The Directive applies to the aquatic habitat of bivalve and gastropod molluscs only (includes oysters, mussels, cockles, scallops and clams). It does not include crustaceans such as lobsters, crabs and crayfish.

³⁷ Nore freshwater pearl mussel is a hard water form of the freshwater pearl mussel. It does not occur outside of Ireland, where it is now only found in the main channel of the River Nore.

³³ Nature Reserves are areas of importance to wildlife, protected under Ministerial order. There are currently 78 Statutory Nature Reserves in Ireland. Most are owned by the State but some are owned by organisations or private landowners.

³⁴ Ramsar Sites are wetlands designated to be of international importance under the Convention of Wetlands of International Importance (especially as Water Fowl Habitat), established at Ramsar in 1971 and ratified by Ireland in 1984. The main aim of the Convention is to secure the designation by each contracting state of wetlands in its territory for inclusion in a list of wetlands of international importance for waterfowl. Ireland presently has 45 sites designated as Wetlands of International Importance, with surface areas of 66,994 hectares.

³⁵ Salmonid waters are included within the Register as areas protected for water-dependent species and habitats.

Twenty-seven Management Plans for the Freshwater Pearl Mussel have been published, the objective of which is to restore the freshwater pearl mussel populations in 27 rivers, or stretches of rivers that are within the boundaries of Special Areas of Conservation. The most significant pressures across these catchments were identified as: point sources in relation to quarries, sand/gravel pits and wastewater treatments plants; and diffuse sources associated with agriculture (including overgrazing), forestry and on-site wastewater treatment systems.

measures to contribute towards the protection of biodiversity and flora and fauna.

4.7.3 Existing Problems

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

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

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

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. The Strategy includes robust

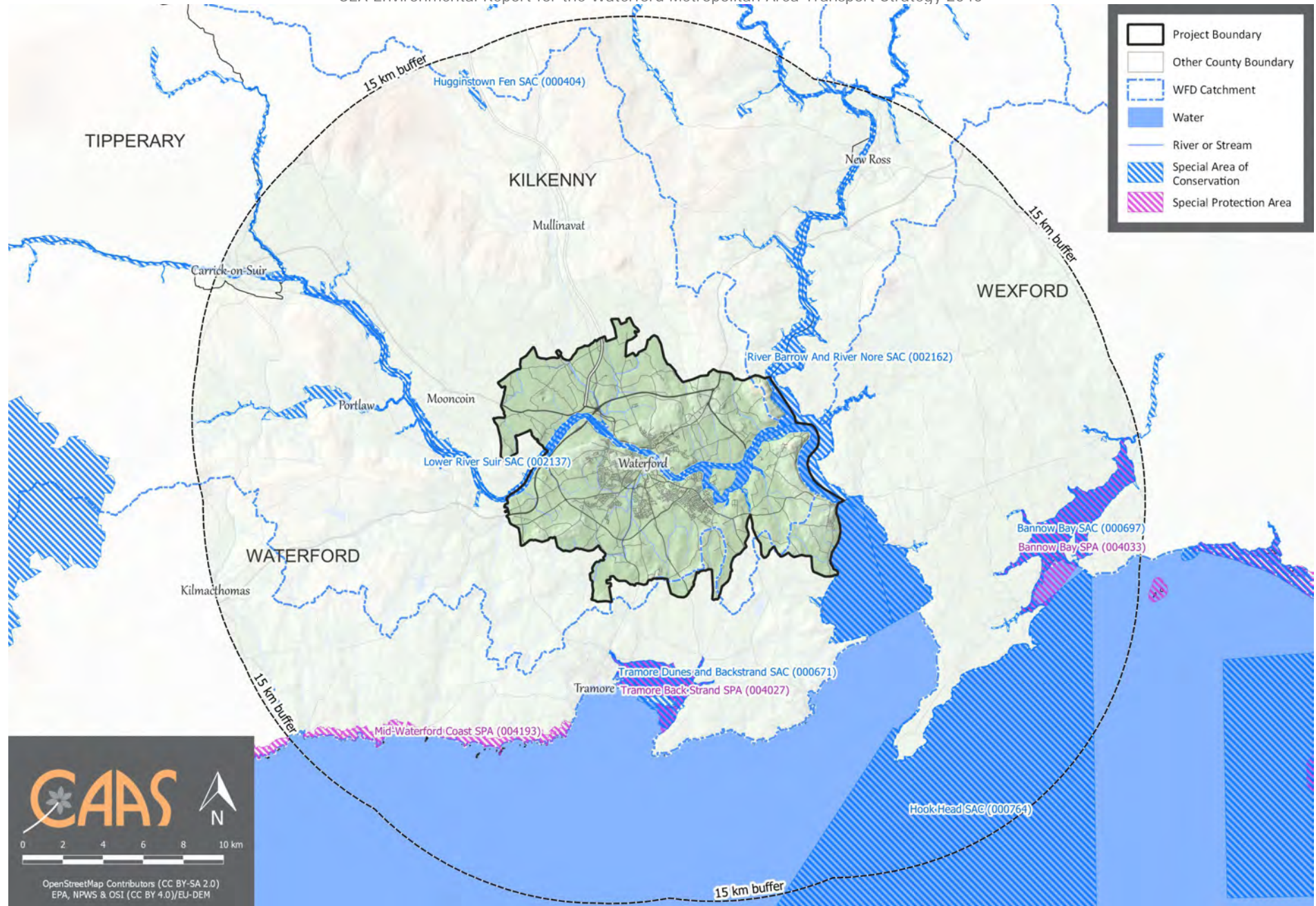


Figure 4.3 European sites within and within 15 km of the Strategy area

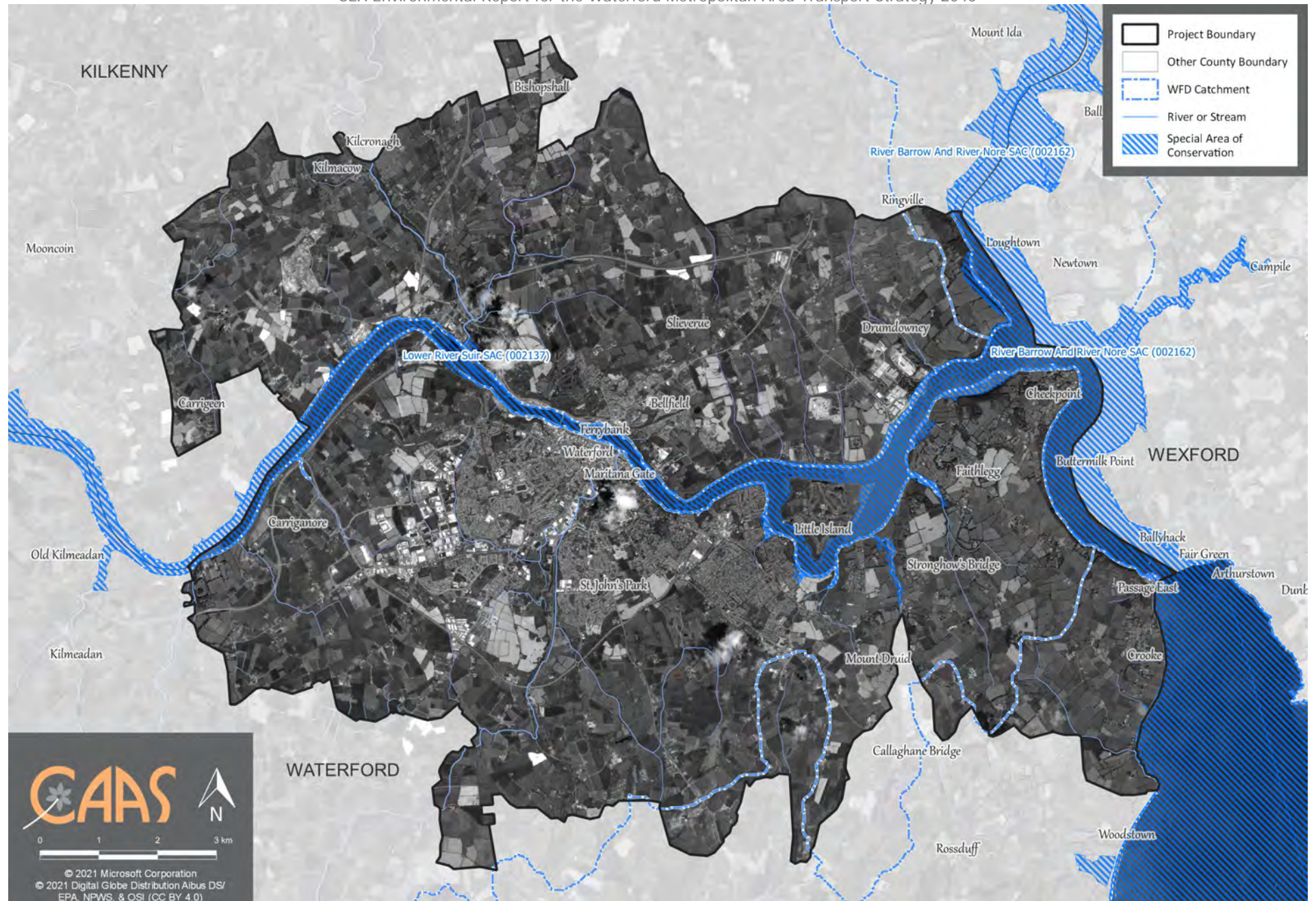


Figure 4.4 European sites within and adjacent to the Strategy area

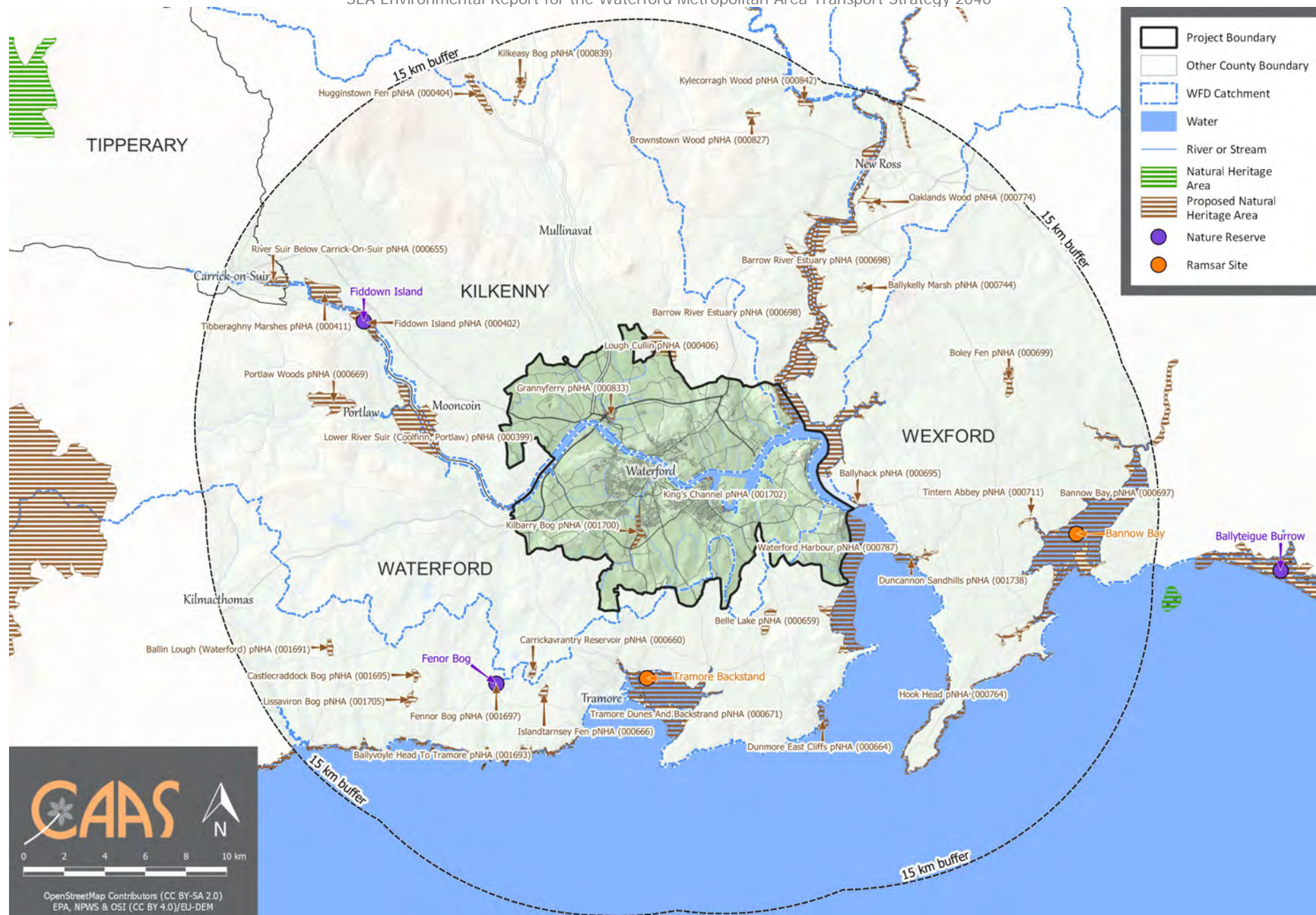


Figure 4.5 Natural Heritage Areas, Proposed Natural Heritage Areas, Nature Reserves and Ramsar Sites within 15 km of the Strategy area
CAAS for the National Transport Authority

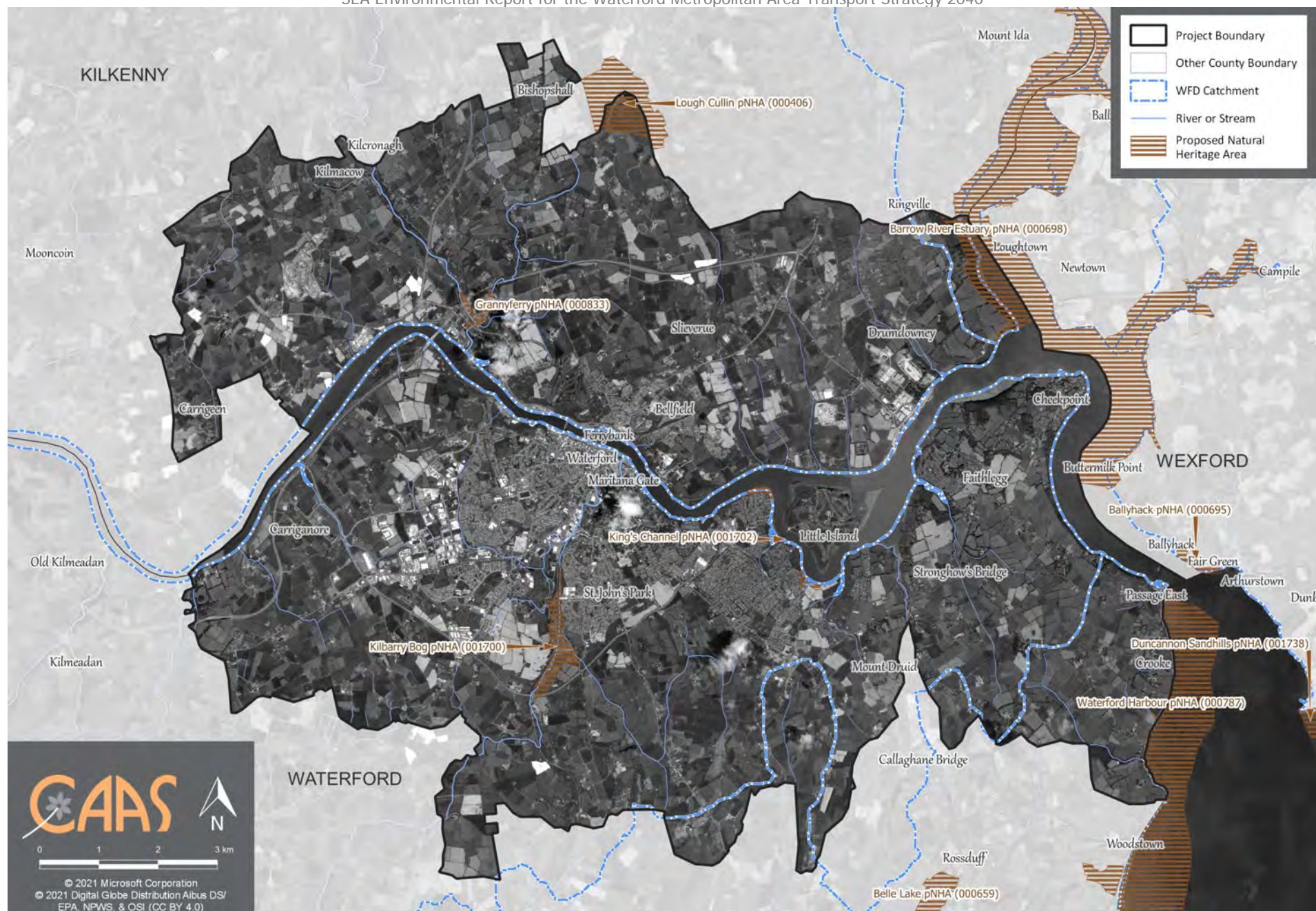


Figure 4.6 Proposed Natural Heritage Areas within and adjacent to the Strategy area

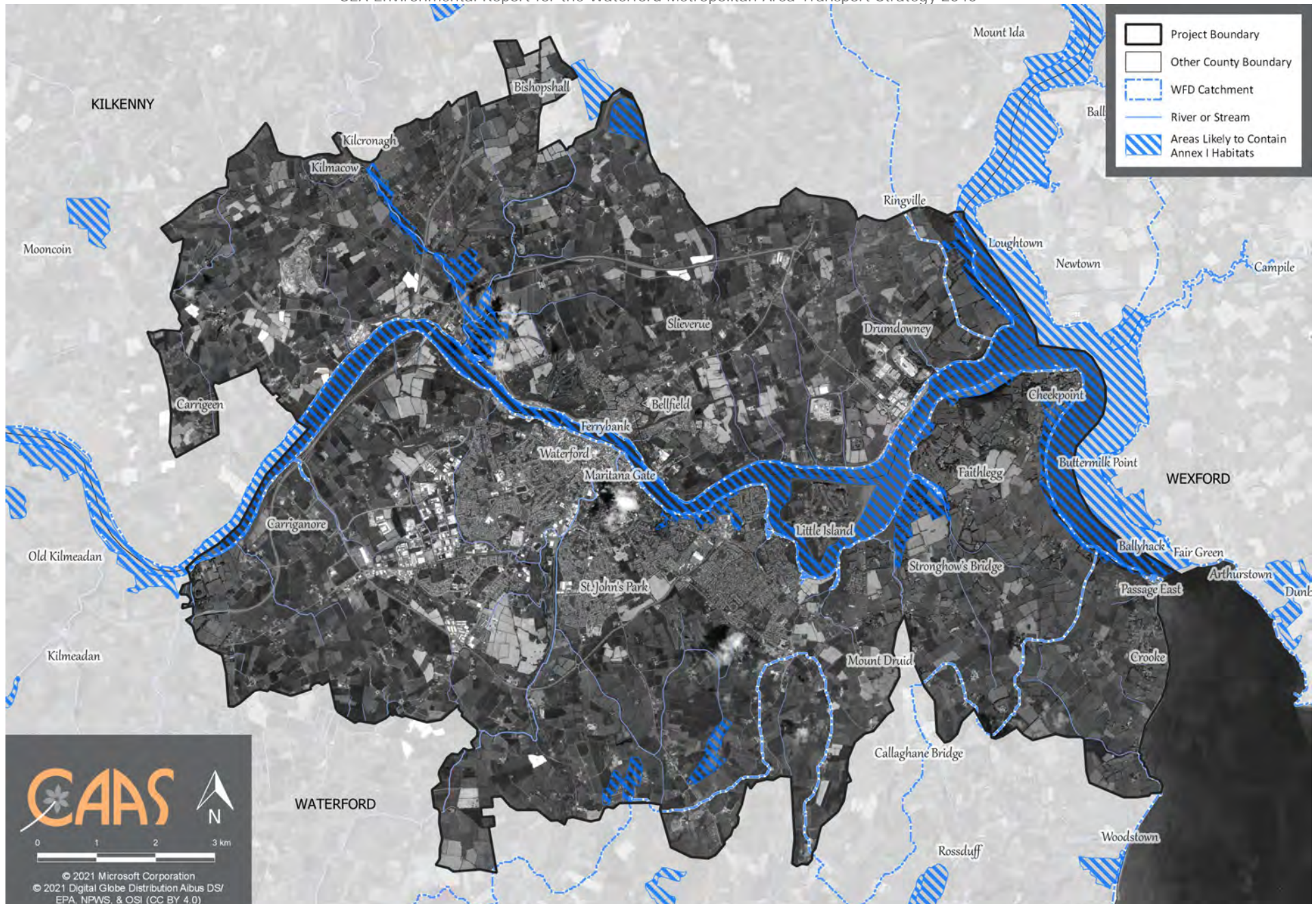


Figure 4.7 Areas likely to contain Annex I Habitats

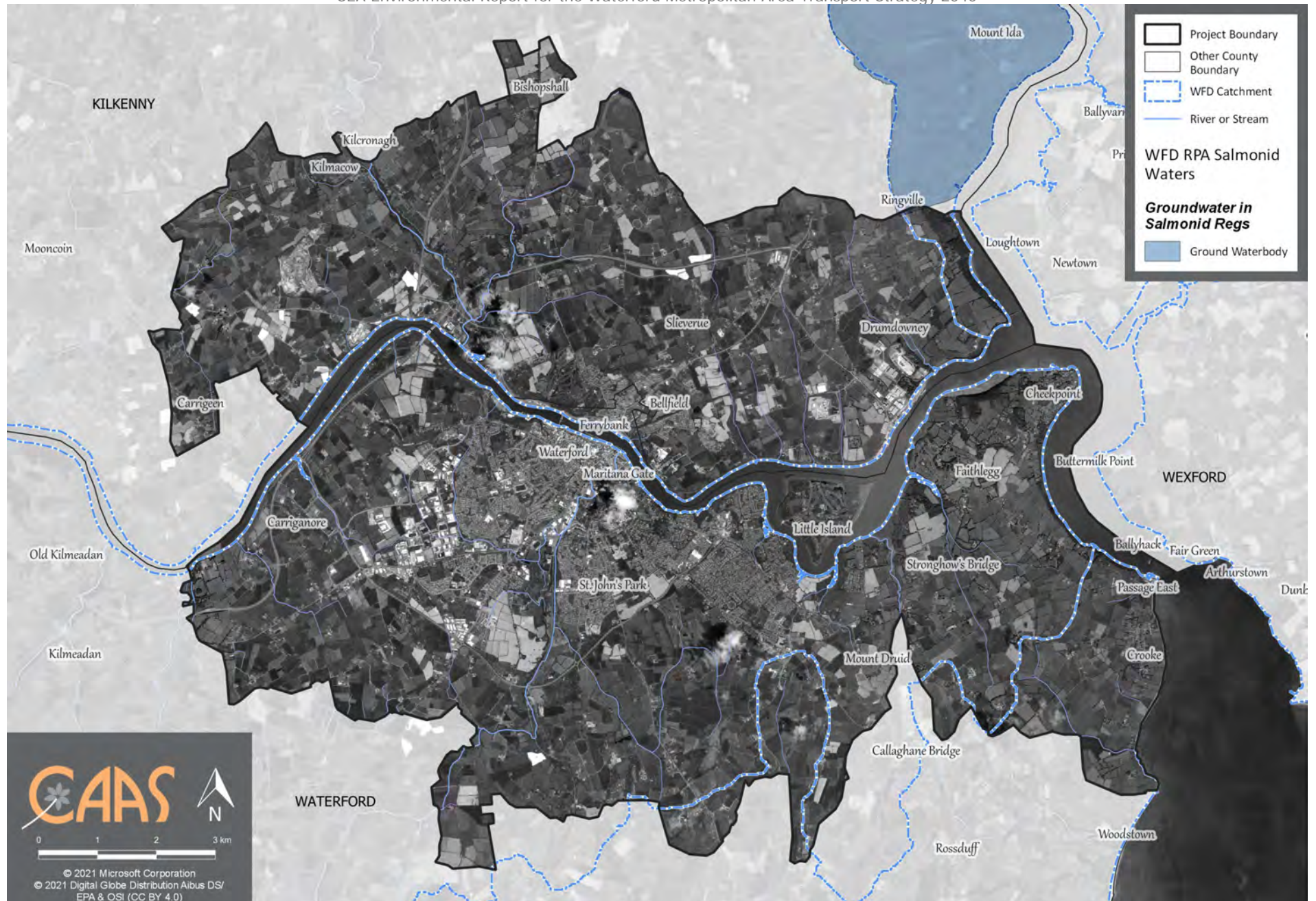


Figure 4.8 WFD RPA Salmonid Waters

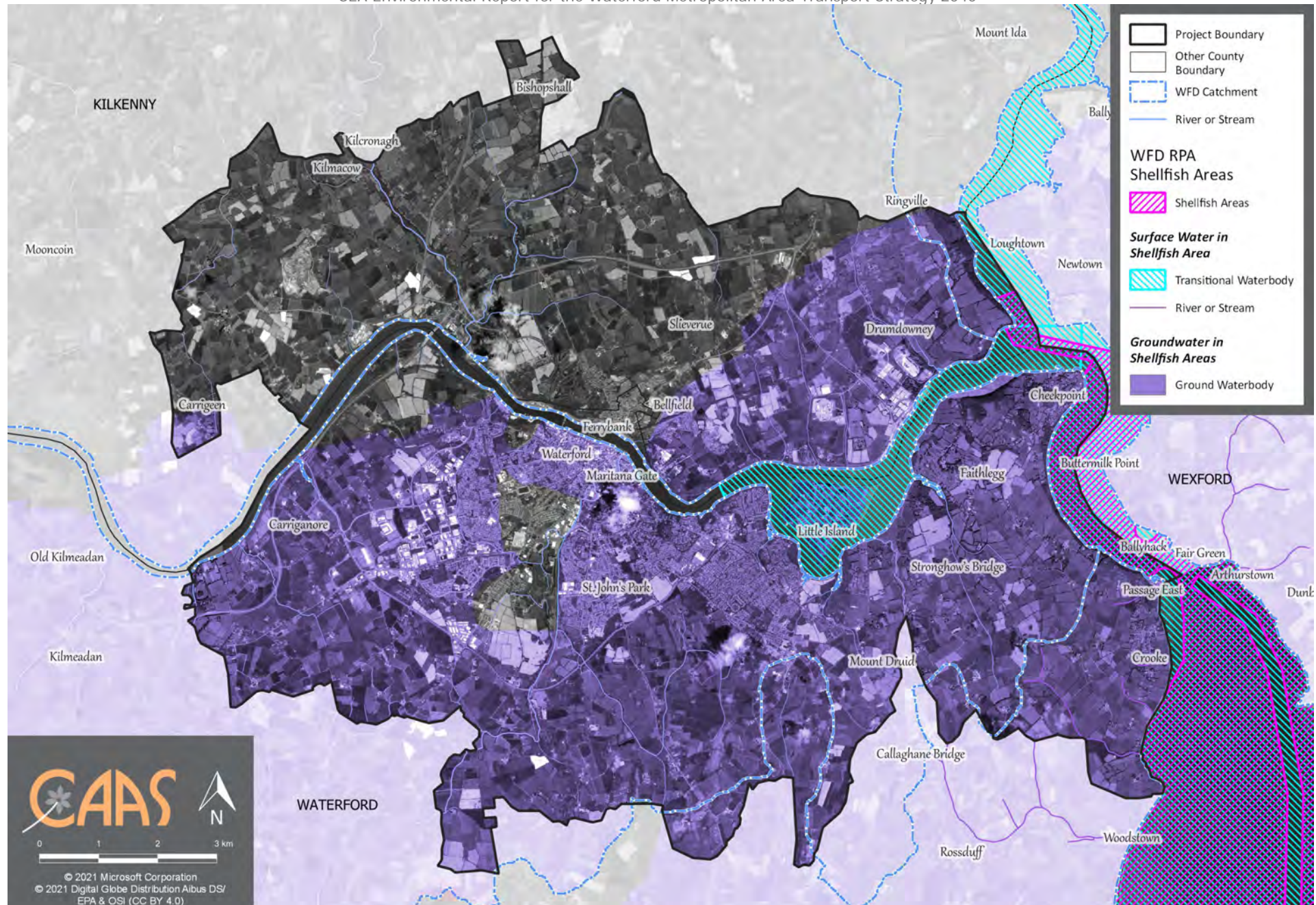


Figure 4.9 WFD RPA Shellfish Areas
CAAS for the National Transport Authority

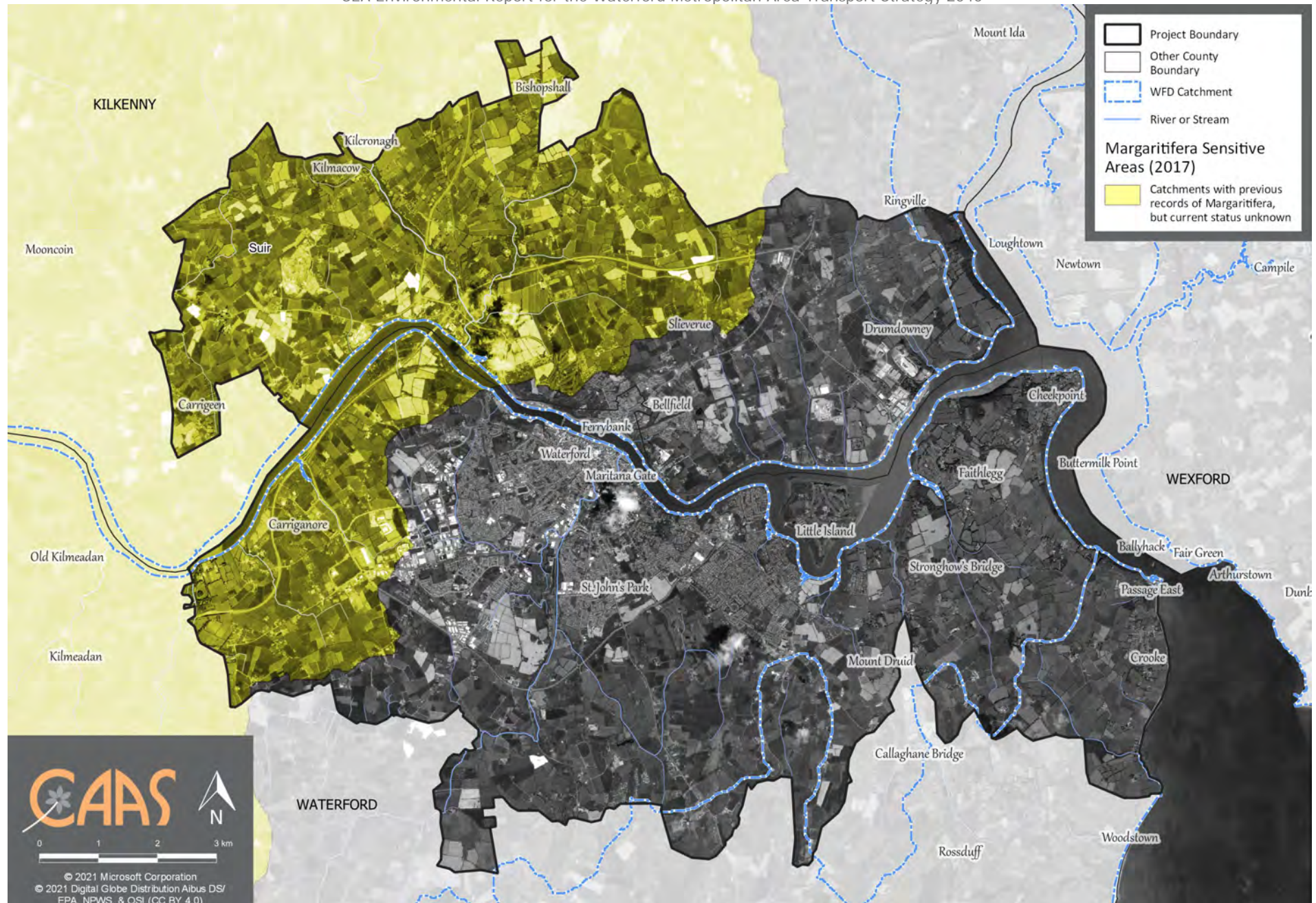


Figure 4.10 Margaritifera Sensitive Areas

4.8 Material Assets

4.8.1 Introduction

Other material assets, in addition to those detailed below, covered by the SEA include archaeological and architectural heritage (see Section 4.12) natural resources of economic value, such as water and air (see Sections 4.5 and 4.10).

4.8.2 Transport

The Strategy relates to the development of transport infrastructure, which is a material asset. This infrastructure can support reductions in energy demand from the transport sector, including through electrification of modes.

Existing transport infrastructure across the Strategy area includes railways, roads, bus and train stations, cycleways and paths. The WMA is served by:

- InterCity rail services;
- City, Regional and Expressway bus/ coach and Local Link services; and
- Waterford Airport (located approximately 10 km to the south-east of the City Centre).

4.8.3 Public Assets and Infrastructure

Public assets and infrastructure which have the potential to be impacted upon by the development of transport infrastructure, if unmitigated, include 'on the ground' resources such as public open spaces, parks and recreational areas; public buildings and services; utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.). These resources are generally located within the immediate outskirts of urban/suburban areas.

4.8.4 Green Infrastructure

Parks and open space promote health and well-being, provide recreational facilities and range of habitats for various species. Green infrastructure is also a crucial component in building resilient communities capable of adapting to the consequences of climate change with trees, woodlands and wetlands providing carbon capture and slowing water flows while improving air quality.

4.8.5 Land

The development of transport infrastructure and services has the potential 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 adverse environmental effects. Brownfield lands are generally located within urban/suburban areas.

4.8.6 Forestry

Some parts of the Strategy area are covered by woodland and treelines, including certain areas adjacent to the channel of the River Suir and Barrow and their estuary. Woodlands provide recreational opportunities in addition to their heritage and economic benefits. They are a valuable resource in terms of biodiversity, recreation and tourism, and also important as links in the county's green infrastructure network.

4.8.7 Peatlands

Peatlands provide a valuable natural and archaeological resource. Peatlands are also important controllers of water levels in river catchments, providing a source of water in dry conditions and soaking up excess water during wetter periods; they actively capture and hold carbon and are an important natural resource in combatting climate change. Cutaway bogs have the potential to facilitate land uses such as employment, renewable energy generation, waste management, industrial, and tourism and recreation. Peat soils, such as those found south-eastern parts of the Strategy area, are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues. Some of the peatland areas are subject to ecological designations.

4.8.8 Coastline and Estuarine Areas

Management of the coastline/estuarine areas and coastal/estuarine erosion are topics with relevance to various environmental components. Coastlines and estuarine areas can be amongst the most sensitive and valuable resources, in terms of natural and cultural heritage, scenic beauty and recreation. The coast is also an important economic

resource - particularly for the fishing, aquaculture, leisure and tourism industries.

In 2019, the OPW completed the Irish Coastal Protection Strategy Study (Phase 3)³⁸ which provides a strategic assessment of the extent of coastal erosion and coastal flooding along the south coast.

Coastal Vulnerability Index mapping is available from the GSI to evaluate impacts of sea-level rise. Vulnerability ranges from *low* to *moderate* to *high*.

Coastal transport infrastructure can be vulnerable to coastal erosion /severe weather conditions and associated storm damage.

4.8.9 Renewable Energy Potential

Under EU Directive 2001/77/EC Renewable Energy, renewable energy sources are defined as renewable non-fossil energy sources such as, but not limited to wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas, bio-gases and bio-char (i.e. the thermal treatment of natural organic materials in an oxygen-limited environment). There is potential for renewable energy development across the Strategy area.

4.8.10 Minerals and Aggregates

Minerals such as iron and copper and aggregates such as sand and gravel can occur throughout the country. Minerals and aggregates are essential to manufacturing and construction.

The GSI have a suite of data sources available that would be useful in planning and assessing individual projects with regard to the environmental topic(s) of soil and/or material assets. These include:

- Aggregate Potential Mapping;
- Bedrock mapping;
- Quaternary and Physiographic mapping; and
- National Aquifer and Recharge mapping.

4.8.11 Waste Management

Any construction waste arising from the development of infrastructure is required to be

dealt with in compliance with relevant EU and National waste management policy, including that relating to the waste hierarchy of prevention, recycling, energy recovery and disposal.

For the purposes of waste management planning, Ireland is now divided into three regions: Southern, Eastern-Midlands and Connacht-Ulster. Waste management plans for each waste management region were published in 2015. The WMA is part of the Southern region.

4.8.12 Existing Problems

No existing problems relevant to the SEA relating to material assets were identified by the assessment.

4.9 Soil

Soil is the top layer of the earth's crust. It is formed by mineral particles, organic matter, water, air and living organisms. Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance. Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action.

To date, there is no legislation which is specific to the protection of soil resources. However, the EU Soil Strategy for 2030 sets out a framework and concrete measures to protect and restore soils, and ensure that they are used sustainably. It sets a vision and objectives to achieve healthy soils by 2050, with concrete actions by 2030. It also announces a new Soil Health Law by 2023 to ensure a high level of environmental and health protection.

Active blanket bogs and active raised bogs are considered to be priority habitats, listed on

³⁸ <https://www.gov.ie/en/collection/a535af-irish-coastal-protection-strategy-study-phase-3-south-coast/#appendix-6-flood-mapping>

Annex I of the EU Habitats Directive. Ombrotrophic (rain-fed) and minerotrophic (groundwater fed) peat soils are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues. Peat soils within the Strategy area are found mainly within the south-east and some pocket areas in the north³⁹. Some of these peat areas are also subject to ecological designations (Figure 4.3).

Information sources relevant to the environmental component of soil which may be used in lower tier planning and environmental assessments includes:

- Soil types (2006) published by Teagasc, Geological Survey of Ireland (GSI), Forest Service & EPA;
- Soils and Subsoils Class (2006) published by Teagasc, GSI, Forest Service & EPA (2006);
- Sites of Geological Interest which have been published for some counties and provisional information on same for other counties (both available from GSI);
- Other datasets published by and available from GSI including those relating to Bedrock Geology, Quaternary Geology, Mineral deposits, Groundwater Resources and Landslides; and
- Datasets on contaminated soils which may be kept by planning authorities (these occur most often in urban areas).

4.9.1 County Geological Sites

Geological Survey of Ireland coordinates the Irish Geological Heritage Programme, which seeks to identify and select sites of geological interest within each county across the country. Sites that are appraised, but which are not selected for NHA designation, are classified as 'County Geological Sites' (CGSs), as recognised in the National Heritage Plan (2002). This enables their integration into County Development Plans. All sites of geological heritage importance are currently classified as CGSs until such time that the most significant sites can be designated as geological NHAs.

Nationally, audits of geological sites in 27 counties have been completed to date, including County Waterford, County Kilkenny and County Wexford⁴⁰. There are four CGSs within or partially within the Strategy area, mapped on Figure 4.11 and listed below:

- Granny Quarry (Site code: KK011);

³⁹ Mapping available from Teagasc: <http://gis.teagasc.ie/soils/map.php>

⁴⁰ More detail on audits of CGSs is available from the GSI <https://www.gsi.ie/en-ie/programmes-and-projects/geoheritage/activities/county-geological-site-audits/Pages/Completed-audits.aspx>.

- N25 Road Cuttings (Site code: WD043);
- Newtown (Site code: WD044); and
- Raheen Shore (site code: WD047).

The Copper Coast United Nations Educational, Scientific and Cultural Organisation (UNESCO) Global Geopark⁴¹ covers geological and cultural heritage of the historic 19th century metal mines, extending approx. 17 km along the coast in County Waterford, and is located approx. 5 km to the south-west of the Strategy area.

4.9.2 Landslides

The term "landslide" describes a wide variety of processes that result in the downward and outward movement of materials such as rock, debris, earth, mud and peat under the force of gravity. Issues such as existing ground conditions, slope stability and storage of excavated material have the potential to influence susceptibility to landslides/bog bursts. The potential impacts of landslides include loss of human life/injury, flooding, pollution of watercourses and impacts upon aquatic biodiversity.

There are three historic landslide events identified within the Strategy area, including two adjacent to Waterford Plunkett Train Station⁴² (shown on Figure 4.12).

The GSI have identified that most of the Strategy area has relatively low levels of landslide susceptibility, with moderate to high susceptibility found along the channels and estuaries of the Barrow and Suir, as well as along the wider coastline (mapped on Figure 4.12).

4.9.3 Existing Problems

Legislative objectives governing soil were not identified as being conflicted with.

⁴¹ UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance, managed with a holistic concept of protection, education and sustainable development. They strive to raise awareness of geodiversity and promote protection, education and tourism best practices. Whilst Global Geopark is not a legislative designation, the key heritage sites within a Geopark must be protected under local, regional and national legislation as appropriate.

⁴² Over 2,500 landslide events are recorded in the National Landslides Database available from GSI (www.gsi.ie). This dataset also includes Landslide Susceptibility Mapping to assist in the identification of areas that are likely to experience landsliding.

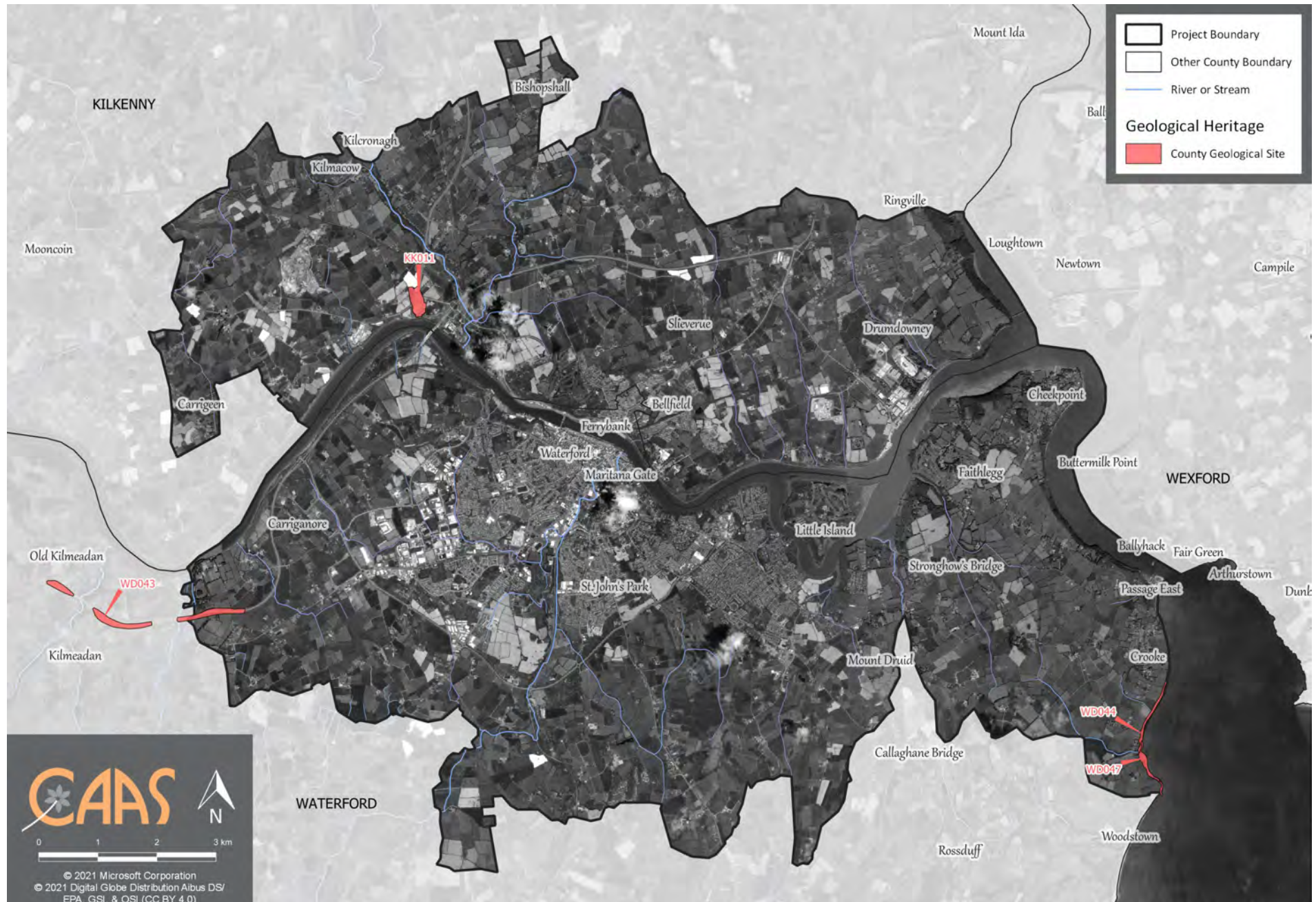


Figure 4.11 County Geological Sites

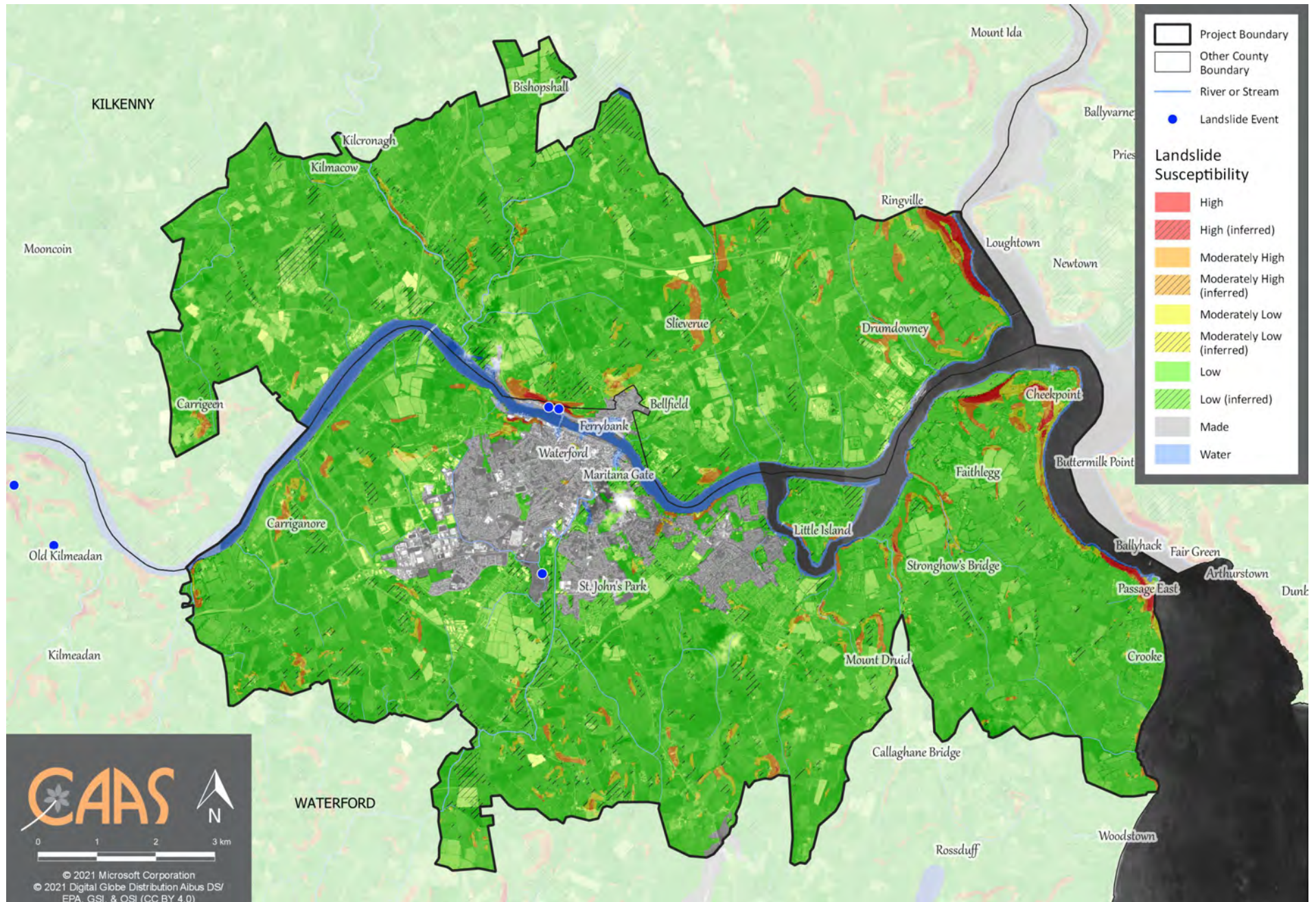


Figure 4.12 Landslide Susceptibility
CAAS for the National Transport Authority

4.10 Water

4.10.1 The Water Framework Directive

Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving good status. All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and improve polluted water bodies to good status.

Article 4 of the WFD sets out various exemptions for deterioration in status caused as a result of certain physical modifications to water bodies. This is provided: all practicable mitigation measures are taken; there are reasons of overriding public interest or the benefits to human health, safety or sustainable development outweigh the benefits in achieving the WFD objective; there are no better alternatives; and the reasons for the physical modification are explained in the River Basin Management Plan.

The EU's Common Implementation Strategy Guidance Documents No. 20 and 36 provide guidance on exemptions to the environmental objectives of the WFD.

For the purpose of assessment, reporting and management, water is divided into groundwater, rivers, lakes, estuarine waters and coastal waters that are in turn divided into specific, clearly defined water bodies.

4.10.2 Zone of Influence

The zone of influence of the Strategy beyond the Strategy boundary, with respect to impacts upon waters, can be estimated to be all bodies of groundwater and all surface waters downstream areas of catchments that drain the Strategy area.

4.10.3 Surface Water Drainage

A catchment is an area of land contributing to a waterbody, with all the water ultimately running off to a single outlet. The WFD requires water quality management to be based on natural river catchments i.e. by reference to the natural, environmental unit rather than by reference to administrative or legal boundaries, which often fragment river catchments.

Catchments draining the Strategy area comprise: Suir; Colligan-Mahon; Barrow; and Ballyteigue-Bannow.

4.10.4 Surface Water Status

The WFD defines 'overall surface water status' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Thus, in order to achieve 'good surface water status' both the ecological status and the chemical status of a surface water body need to be at least 'good'.

Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as of 'good ecological status' when they meet Directive requirements.

Chemical Status is a pass/fail assignment with a failure defined by a face-value exceedance of an Environmental Quality Standards (EQS) for one or more Priority Action Substances (PAS) listed in Annex X of the WFD. The EQS values for individual PAS substances are set at European level. Good surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the Directive.

The WFD surface water status (2013-2018), for rivers and transitional waters within and surrounding the Strategy area is shown on Figure 4.13 and detailed on Table 4.1.

The WFD status of some sections⁴³ of the rivers within the Strategy area are classified as *moderate* and *good*, however sections of St. John's River (0_10 and 0_20) are identified as

⁴³ As per EPA classification system (gis.epa.ie/EPAMaps)

poor due to unsatisfactory ecological/biological and/or physio-chemical status.

The WFD surface water status (2013-2018) of transitional waterbodies within and surrounding the Strategy area is identified as *moderate* (Barrow Suir Nore Estuary and New Ross Port) and *good* (Lower Suir Estuary/Little Island-Checkpoint), however Middle Suir Estuary is identified as *poor* due to unsatisfactory ecological/biological and/or physio-chemical status.

Significant pressures, those pressures which need to be addressed in order to improve water quality, have been identified⁴⁴ for waterbodies that are 'At Risk' of not meeting their water quality objectives under the WFD. Significant pressures for surface water bodies within or adjacent to the Strategy area are identified on Table 4.1. There are various types of pressures identified, such as:

- **Agricultural pressures** - can include issues related to farming including loss of excess nutrients and sediment loss to surface waters from diffuse sources such as spreading of fertilisers and manures. Excess phosphorous and sediment are typically issues for rivers and lakes, and too much nitrogen is the main issue for estuaries and coastal waters.
- **Urban run-off pressures** - can include leaking sewers and run-off from paved and unpaved areas and misconnections where private foul connections are connected to storm sewers instead of the foul sewer network.
- **Urban wastewater pressures** - can include direct discharge of nutrients from urban wastewater treatment plants and discharge from combined storm overflows or storm water overflows. Discharges of elevated concentrations of phosphorus, ammonium and nitrogen impact on the ecology of surface waters.
- **Hydromorphological and anthropogenic pressures** are identified together in many instances. Hydromorphological pressures can include: modifications to the physical habitat conditions or the natural functioning of a waterbody which can impact on ecology, caused by dredging and straightening of rivers (channelisation), land drainage or hard infrastructure such as dams, weirs, culverts or other obstructions. Anthropogenic pressures can include: water abstractions; invasive species; agriculture; use of fertilizers, manures and pesticides; animal husbandry activities; inefficient irrigation practices; deforestation of woods; aquaculture; pollution due to industrial effluents and domestic sewage; and recreational activities.

- **Industrial pressures** - can include discharges and emissions from industrial and commercial facilities.

4.10.5 Ground Water

Groundwater is stored in the void spaces in underground layers of rock, or aquifers. These aquifers are permeable, allowing both the infiltration of water from the soils above them and the yielding of water to surface and coastal waters. Groundwater is the part of the subsurface water that is in the saturated zone - the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water.

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either *good* or *poor*. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status.

The WFD status (2013-2018) of groundwater underlying the Strategy area (shown on Figure 4.14) is mostly identified as being of *good* status, with some areas of *poor* status, including areas underlying Industrial Facility (P0157-02) and Waste Facility (W0018-01), within and adjacent to the southern parts of the Waterford city centre.

⁴⁴ EPA (2019): Report on Water Quality in Ireland 2013-2018

Table 4.1 WFD River and Transitional Waterbodies Status⁴⁵

Waterbody Name (EPA Identification Code) ⁴⁶	Waterbody Type	WFD Waterbody Status (2013-2018) ⁴⁷
St John's_020	River	Poor – due to poor ecological/biological status. This waterbody is identified as being under pressure from agricultural and urban run-off sources .
Middle Suir Estuary	Transitional	Poor – due to poor ecological/biological status. This waterbody is identified as being under pressure from agricultural sources .
St John's_010	River	Poor - due to poor ecological/biological status. This waterbody is identified as being under pressure from urban run-off sources .
Ballygunnmore_010	River	Moderate . This waterbody is identified as being under pressure from agricultural sources .
Blackwater (Kilmacow)_050	River	Moderate . This waterbody is identified as being under significant pressure from hydromorphological/anthropogenic sources .
Blackwater (Kilmacow)_040	River	Moderate . No pressures identified.
Halfway House Stream_010	River	Moderate . This waterbody is identified as being under pressure from urban run-off sources .
Smartscastle Stream_020	River	Moderate . This waterbody is identified as being under pressure from agricultural sources .
Faithlegg_010	River	Moderate . This waterbody is identified as being under pressure from agricultural sources .
Flemingstown (Kilkenny)_010	River	Moderate . This waterbody is identified as being under significant pressure from hydromorphological/anthropogenic sources .
Glengrant_010	River	Moderate . This waterbody is identified as being under significant pressure from industrial sources .
Lower Suir Estuary (Little Island – Cheekpoint)	Transitional	Good . This waterbody is identified as being under pressure from agricultural sources .
Ballymoat (Stream)_010	River	Good . This waterbody is also identified as being under significant pressure from urban wastewater sources .
Cooltegin_010	River	Good . This waterbody is identified as being under pressure from agricultural sources .
Luffany_010	River	Good . This waterbody is identified as being under significant pressure from hydromorphological/anthropogenic sources .
Ullid_010	River	Good . This waterbody is identified as being under significant pressure from hydromorphological/anthropogenic sources .

⁴⁵ Source: <https://gis.epa.ie/EPAMaps/> and <https://gis.epa.ie/EPAMaps/Water>.

⁴⁶The number at the end of each river waterbody name indicates where the waterbody is located along the main river channel. For example, the waterbody at the source is coded '_010', the next waterbody downstream is coded '_020'.

⁴⁷There is a data gap relating to WFD surface water status data. Any waterbodies with overall status currently not assigned to them and the term "unassigned status" applies in respect of these waterbodies. These are not included on Table 4.1.

4.10.6 Aquifer Vulnerability and Productivity

The Geological Survey of Ireland (GSI) rates groundwaters according to both their productivity and vulnerability to pollution.

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter into groundwater. The vulnerability of aquifers underlying the Strategy area are mapped on Figure 4.14 and generally classified as being of:

- *Low vulnerability;*
- *Moderate; and*
- *High, Extreme vulnerability and Extreme (rock at or near surface or karst).*

The GSI also rates aquifers based on the hydrogeological characteristics and on the value of the groundwater resource. This is referred to as aquifer productivity and is mapped on Figure 4.15. Productivity within the Strategy area is generally classified as being:

- *Poor aquifer bedrock which is generally unproductive except for local zones;*
- *Regionally important aquifer fissured bedrock;*
- *Regionally important aquifer karstified (diffuse);*
- *Locally important aquifer bedrock which is moderately productive only in local zones; and*
- *Locally important aquifer bedrock which is generally moderately productive.*

Groundwater Source Protection Area delineation provides an assessment of the land that contributes groundwater to a borehole or spring. Source reports have been undertaken by the GSI on behalf of Local Authorities since the mid-1990s. Since then, more than 120 have been completed. There are no Source Protection Areas located within the Strategy area.

4.10.7 WFD Registers of Protected Areas

The WFD requires that Registers of Protected Areas (RPAs) are compiled for a number of water bodies or part of water bodies which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife.

The WFD requires that these RPAs contain: areas from which waters are taken for public or private water supply schemes; designated shellfish production areas; bathing waters;

areas which are affected by high levels of substances most commonly found in fertilizers, animal and human wastes - these areas are considered nutrient sensitive; areas designated for the protection of habitats or species e.g. Salmonid areas; Special Areas of Conservation (SACs); and Special Protection Areas (SPAs).

Entries to the RPAs within and adjacent to the Strategy area include:

- Surface Water and Groundwater⁴⁸ in Nutrient Sensitive Areas⁴⁹ (mapped on Figure 4.17);
- Drinking Water Surface Water Bodies⁵⁰ (mapped on Figure 4.18). Groundwater beneath the entire Strategy area is also included; and
- Surface Waters and Groundwater in Bathing Areas⁵¹ (mapped on Figure 4.19).

RPAs relating to Salmonid Regulations and Shellfish Areas are addressed under Section 4.5 "Biodiversity and Flora and Fauna".

There are also a number of water dependent habitats in the Strategy area which have been listed on RPAs – these relate to designated SACs and SPAs.

4.10.8 Potential Water Sensitivity Map

A potential water sensitivity map (shown on Figure 4.20) has been prepared as part of the SEA process. The purpose of the map is to indicate at a regional level where the main concentrations of water sensitivities might occur within and surrounding the Strategy area.

⁴⁸ Groundwater bodies that intersect with areas designated as sensitive.

⁴⁹ Areas designated as sensitive under the Urban Wastewater Treatment Directive (91/271/EEC) and transposing Regulations.

⁵⁰ Various water bodies are used for drinking water abstraction in accordance with European Communities (Drinking Water) (No. 2) Regulations 2007 (SI No. 278/2007).

⁵¹ Bathing Waters are designated under the Bathing Water Quality Regulations 2008 S.I. No. 79 of 2008, as amended. Bathing Water Areas with designated Bathing Water Locations exist for the EU Water Framework Directive. Bathing waters are now classified into four quality categories; 'excellent', 'good', 'sufficient', or 'poor' with a minimum target of 'sufficient' required to be achieved for all bathing waters. The most recent available data from the EPA for 2021 identifies the locations of designated bathing waters. There are currently no bathing locations identified within the Strategy area. The nearest bathing locations beyond the Strategy area are classified as 'sufficient' (Duncannon) and 'excellent' (Tramore Beach, Counsellors' Strand and Dunmore Strand).

The map is prepared at the regional scale and different layers or weightings would produce different map outputs. Where the sensitivity mapping shows a concentration of water sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration, if mitigation is not applied. It is emphasised that the occurrence of water sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the Strategy - will need to be adhered to at lower tiers of decision making in order to ensure that the implementation of the Strategy contributes towards the objectives of the Water Framework Directive. It is emphasised that the map is a high scale, regional map and additional, local water sensitivities may become apparent during the consideration of projects at local level.

The potential water sensitivity map (Figure 4.20) has been prepared by weighting layers relating to water sensitivity and overlaying them using GIS software. The layers and associated weightings are detailed on Table 4.2.

Table 4.2 Water Sensitivity Layers and Weighting

Layer	Weight
WFD River and Transitional Waters Status of Poor Status	10
WFD River and Transitional Waters Status of Moderate Status and Unassigned Status	5
WFD Groundwater of Poor Status	10
GSI Groundwater Extreme or Karst Vulnerability	10
GSI Groundwater High Vulnerability	5
WFD RPA Entries for Groundwater for Drinking Water; Shellfish Areas and associated Surface and Ground Waters; and Nutrient Sensitive Lakes and Estuaries.	10

On Figure 4.20 areas with higher water sensitivities are indicated by darker orange colours, areas with moderate water sensitivities are indicated by yellow colours and areas with lower water sensitivities are indicated with green colours.

The south and north-east parts of the Strategy area are generally most sensitive, mainly due to groundwater sensitivities.

4.10.9 Flooding

Flooding is an environmental phenomenon which, as well as causing economic and social impacts, could in certain circumstances pose a risk to human health. The existence of flood risk across the country is illustrated by various sources of information on historical flooding events – including those available from the Office of Public Works, the lead Authority on flooding in the country, National Flood Hazard Mapping website. In addition to this historic mapping there is predictive, modelled Preliminary Flood Risk Assessment and Flood Risk and Hazard mapping available from the OPW including through the National Catchment Flood Risk Management Programme. These mapping sources identify flood risk from various sources, including fluvial, pluvial, coastal and groundwater. The Flood Risk and Hazard mapping has informed the preparation of Flood Risk Management Plans (including for the Suir, Nore and Colligan-Mahon River Basins) which have been in force since 2018 across different parts of the Strategy area.

4.10.10 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.

There is historic and predictive evidence of elevated levels of flood risk from fluvial and coastal sources at various locations across the the Strategy area.

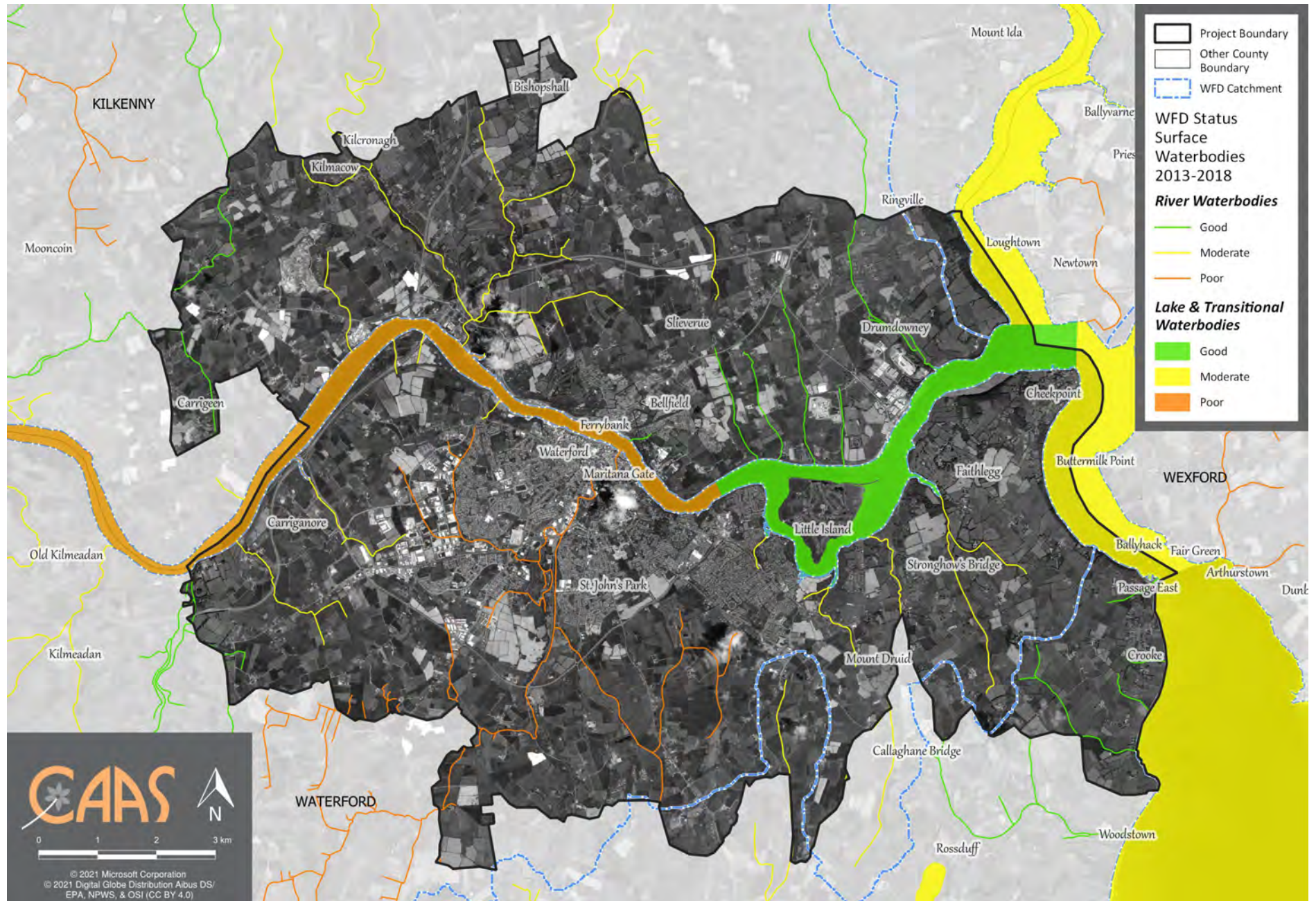


Figure 4.13 WFD Surface Water Status (2013-2018)

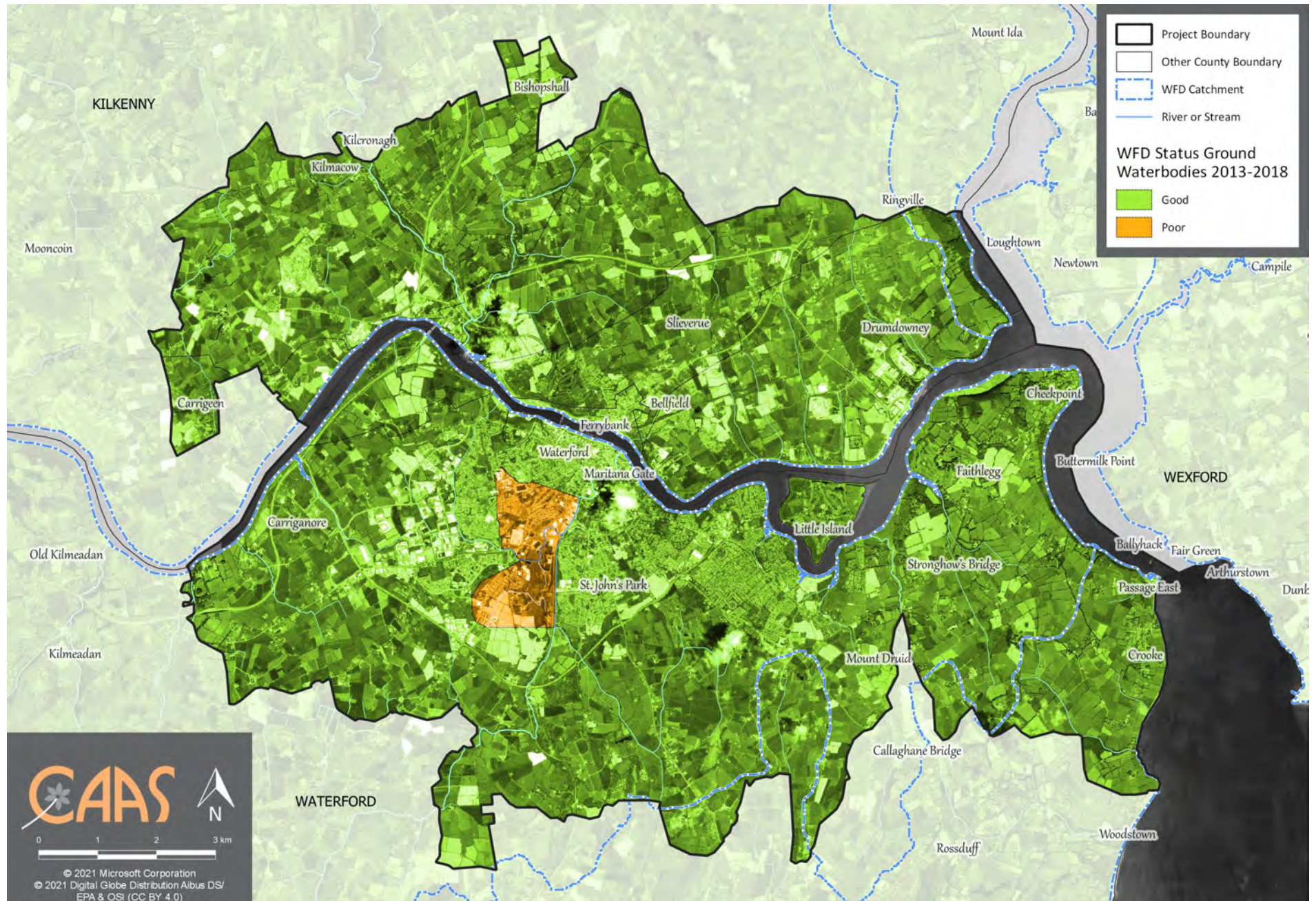


Figure 4.14 WFD Groundwater Status (2013-2018)

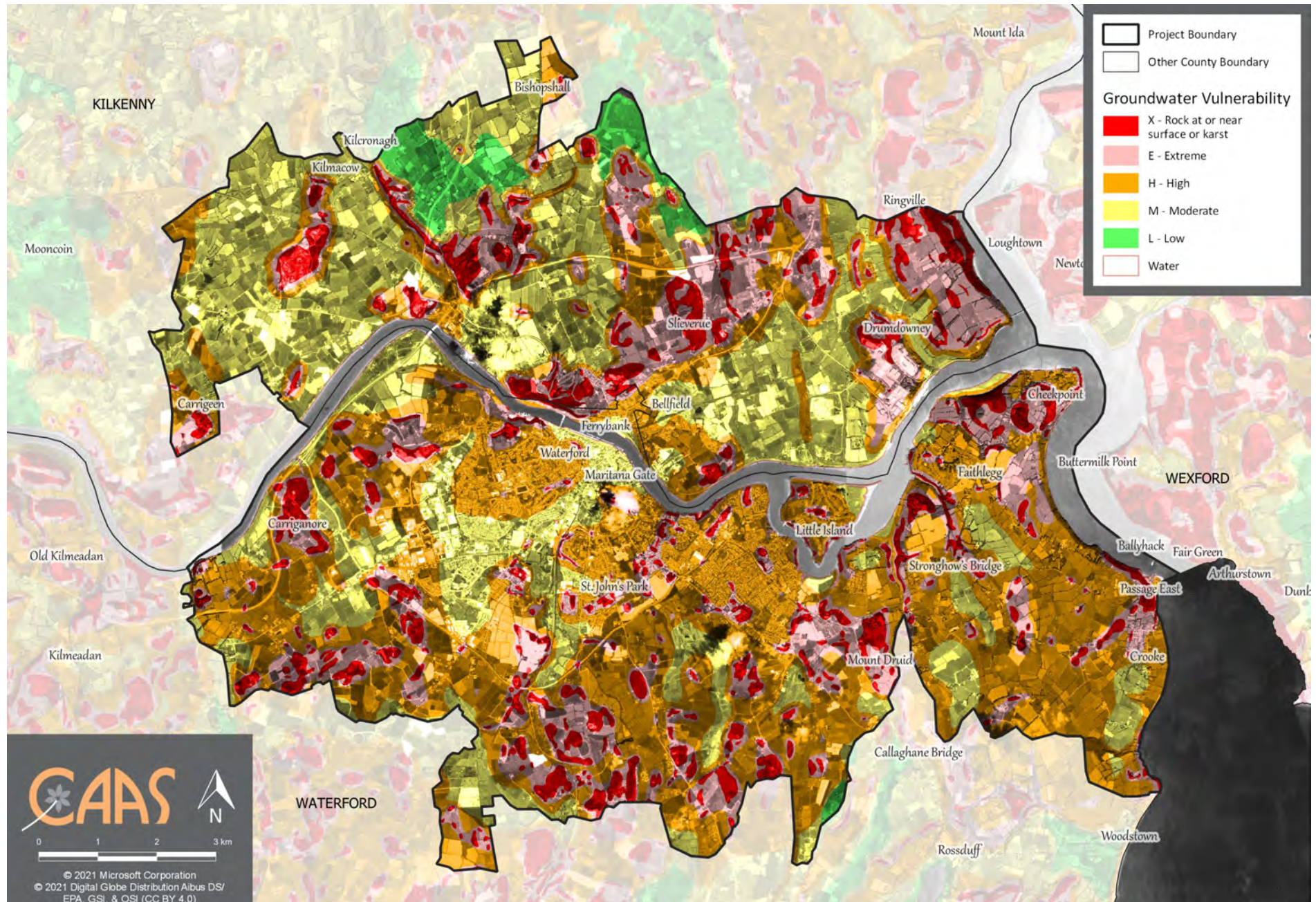


Figure 4.15 Groundwater Vulnerability

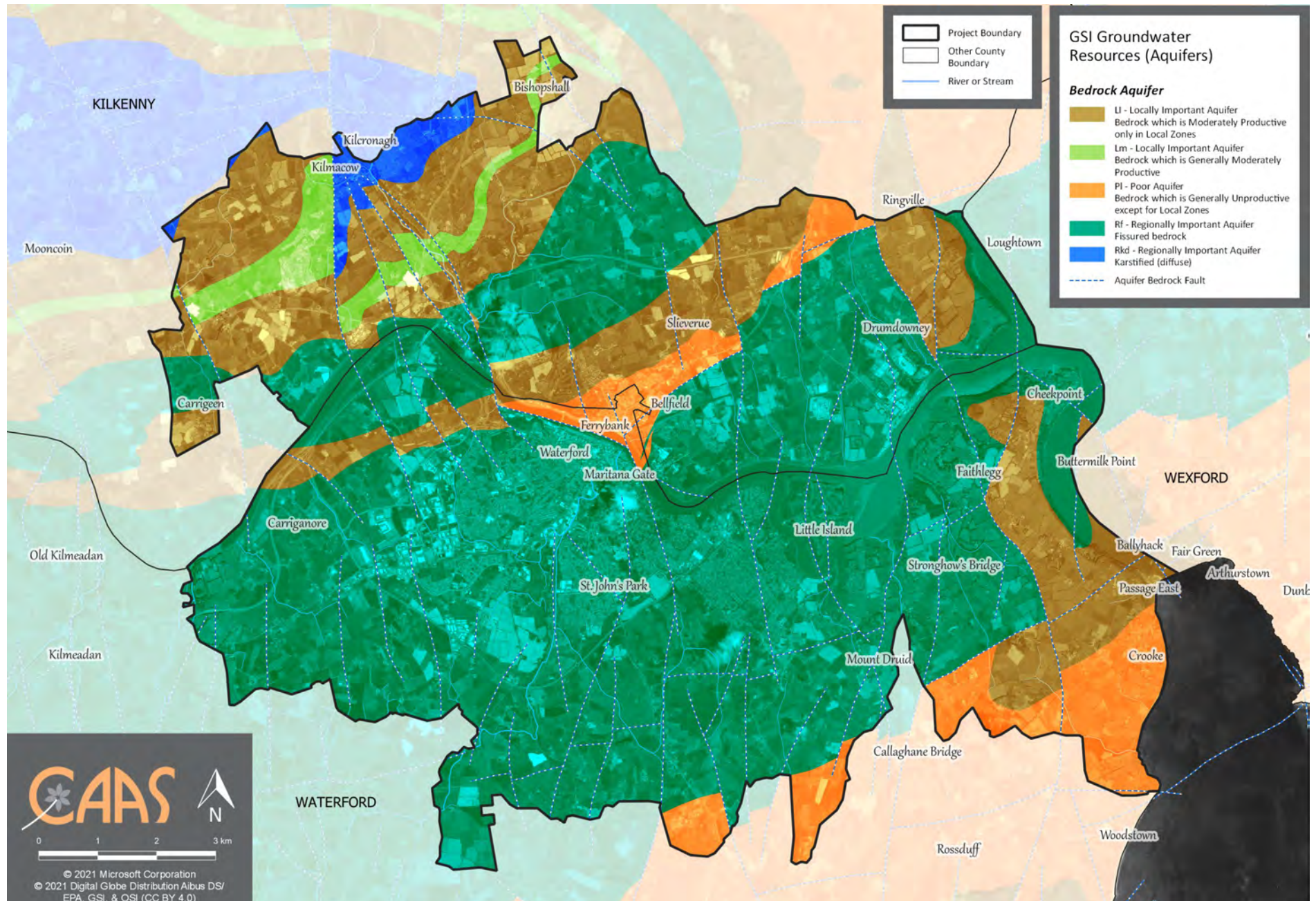


Figure 4.16 Groundwater Productivity

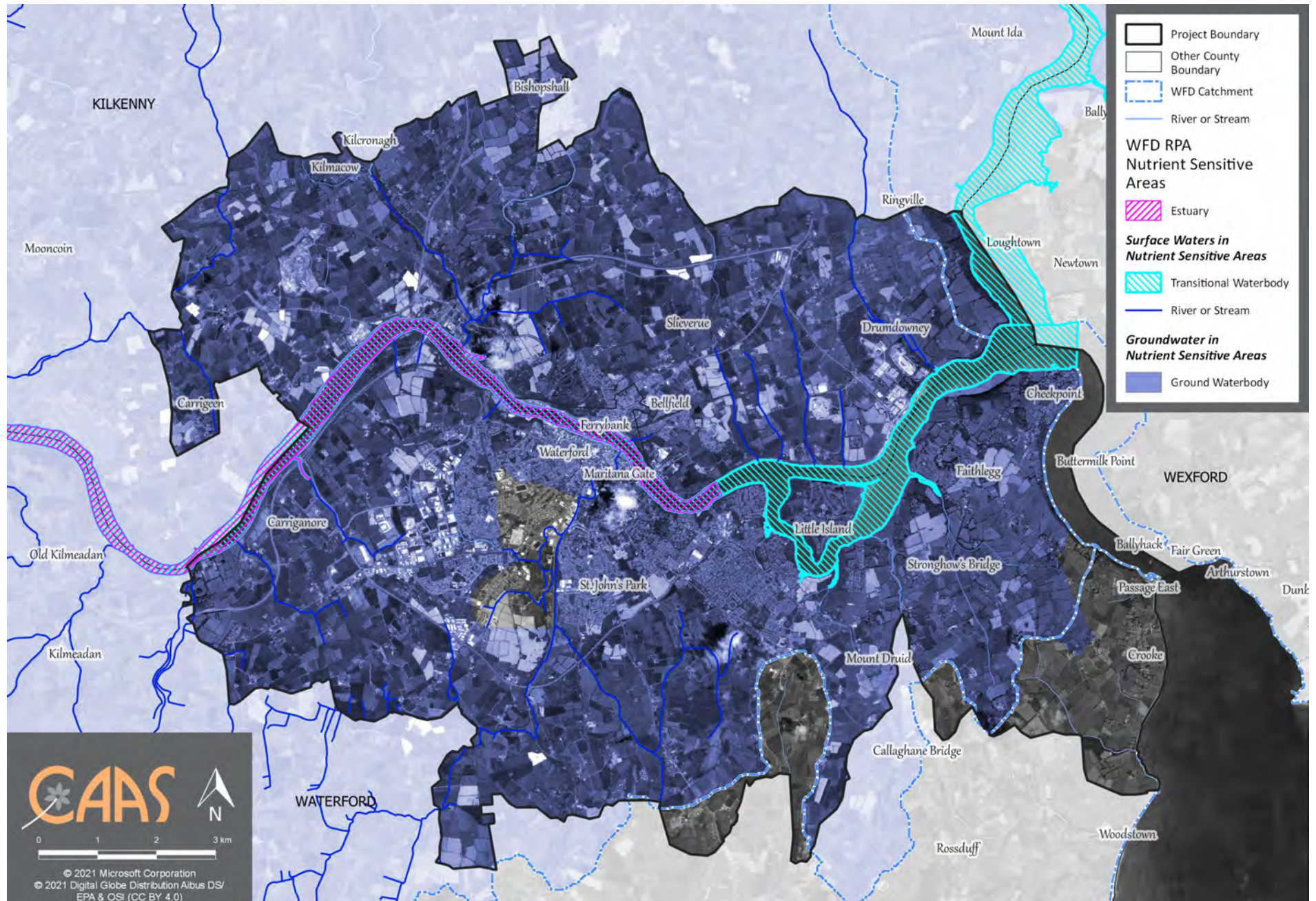


Figure 4.17 WFD RPA Nutrient Sensitive Areas

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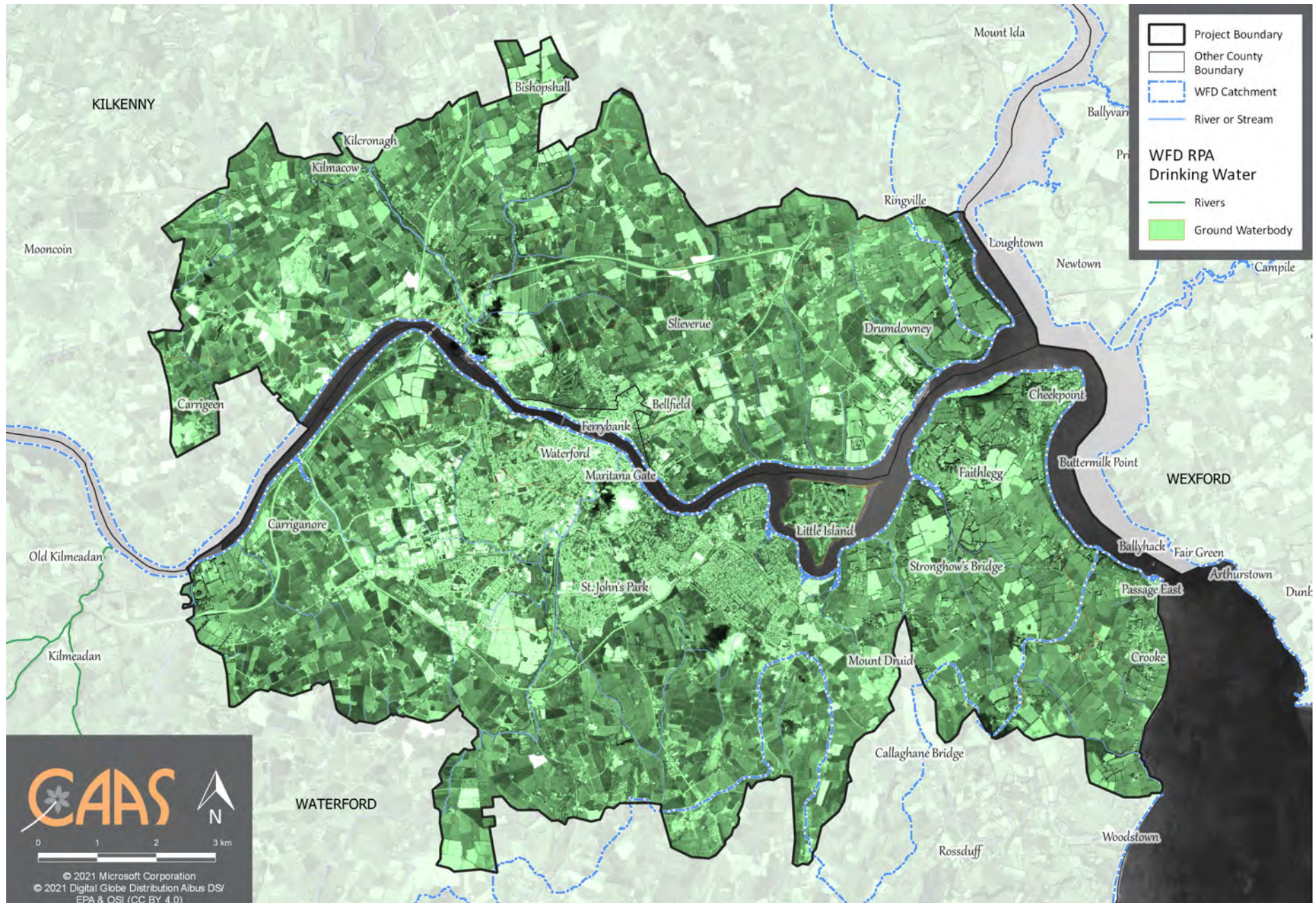


Figure 4.18 WFD RPA Drinking Water

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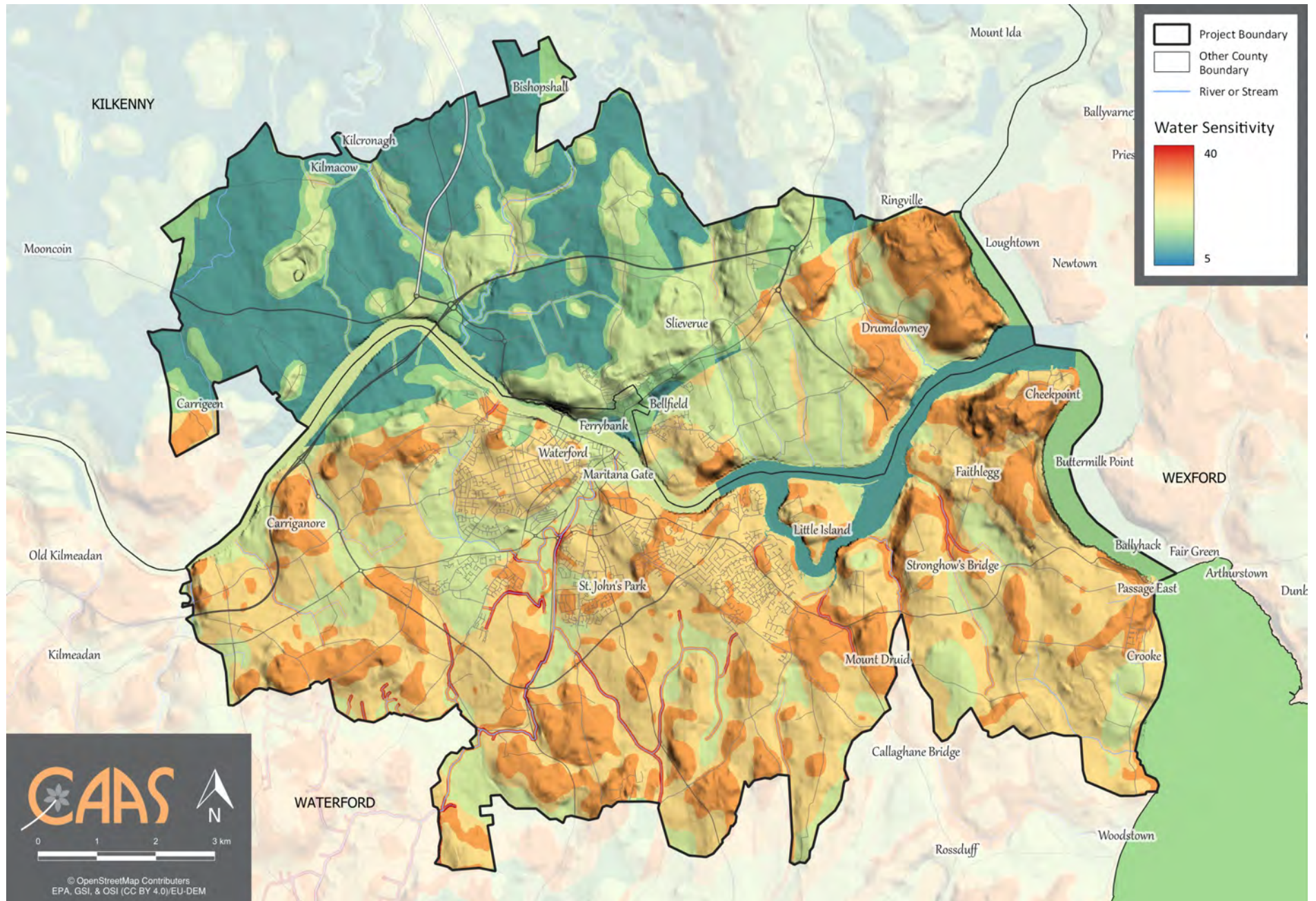


Figure 4.20 Potential Water Sensitivity

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4.11 Landscape

4.11.1 Introduction

Landscapes are areas which are perceived by people and are made up of a number of layers: landform, which results from geological and geomorphological history; landcover, which includes vegetation, water, human settlements, and; human values which are a result of historical, cultural, religious and other understandings and interactions with landform and landcover.

The unique visual character of the Strategy area is due to its variety of landscapes, seascapes⁵² and rich and diverse built, natural and cultural heritage. The Strategy area encompasses landscape designations and sensitivities that have been identified by Development Plans prepared for administrative areas of Counties Waterford and Kilkenny and also landscape designations and sensitivities in adjacent counties.

4.11.2 Designations

The importance of landscape and visual amenity and the role of its protection are recognised in the Planning and Development Act 2000 as amended, which requires that Development Plans include objectives for the preservation of the landscape, views and the amenities of places and features of natural beauty. These objectives and associated plan content often designate different aspects of the landscape such as the following:

- Landscape character areas;
- Landscape sensitivity and value areas;
- High amenity zones;
- Scenic views and prospects; and
- Land use objectives relating to landscape protection.

Such designations, which vary from local authority to local authority and change over time, should be taken into account by lower tier planning and environmental assessments.

⁵² The Marine Institute's (2020) "Regional Seascape Character Assessment Final Report" includes Waterford Harbour and surrounding areas as part of Seascape Character Area No. 12 "Celtic Sea Bays and Beaches".

4.11.3 Landcover

CORINE land cover mapping classifies land cover under various headings. This dataset allows for the identification of areas that are likely to be most visually sensitive and robust.

Land cover is the observed physical cover, as seen from the ground or through remote sensing, including for example natural or planted vegetation, water and human constructions which cover the earth's surface.

The CORINE Land Cover map is based on interpretation of satellite images.

Three Categories of potential landcover sensitivity have been identified as follows by combining the following landcover layers:

Category 1 Robust Landcover

- Sport and leisure facilities
- Continuous urban fabric
- Discontinuous urban fabric
- Industrial or commercial units
- Road and rail networks
- Sea ports
- Airports
- Mineral extraction sites
- Dump
- Construction sites

Category 2 Normal Landcover

- Non-irrigated land
- Coniferous forest
- Complex cultivation patterns
- Pasture
- Transitional woodland scrub
- Land principally occupied by agriculture with areas of natural vegetation

Category 3 Sensitive Landcover

- Fruit trees and berry
- Green urban sites
- Broad-leaved forest
- Peat bog
- Natural grassland
- Water bodies
- Coastal lagoons
- Mixed Forests
- Moors and Heaths
- Intertidal Flats
- Beaches Dunes Sand
- Inland marshes
- Stream Courses
- Estuaries
- Sparsely Vegetated Areas
- Burnt Areas
- Salt Marshes
- Bare Rocks

Potential landcover sensitivity mapping is shown on Figure 4.21. Normal landcover is the predominant landcover type and is generally found throughout of the Strategy area. Robust landcover is found within and surrounding the Waterford City and in pockets throughout the Strategy area. Sensitive landcover is most common within and surrounding the rivers and transitional waterbodies, especially across the central and eastern parts of the Strategy area.

4.11.4 Existing Environmental Problems

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

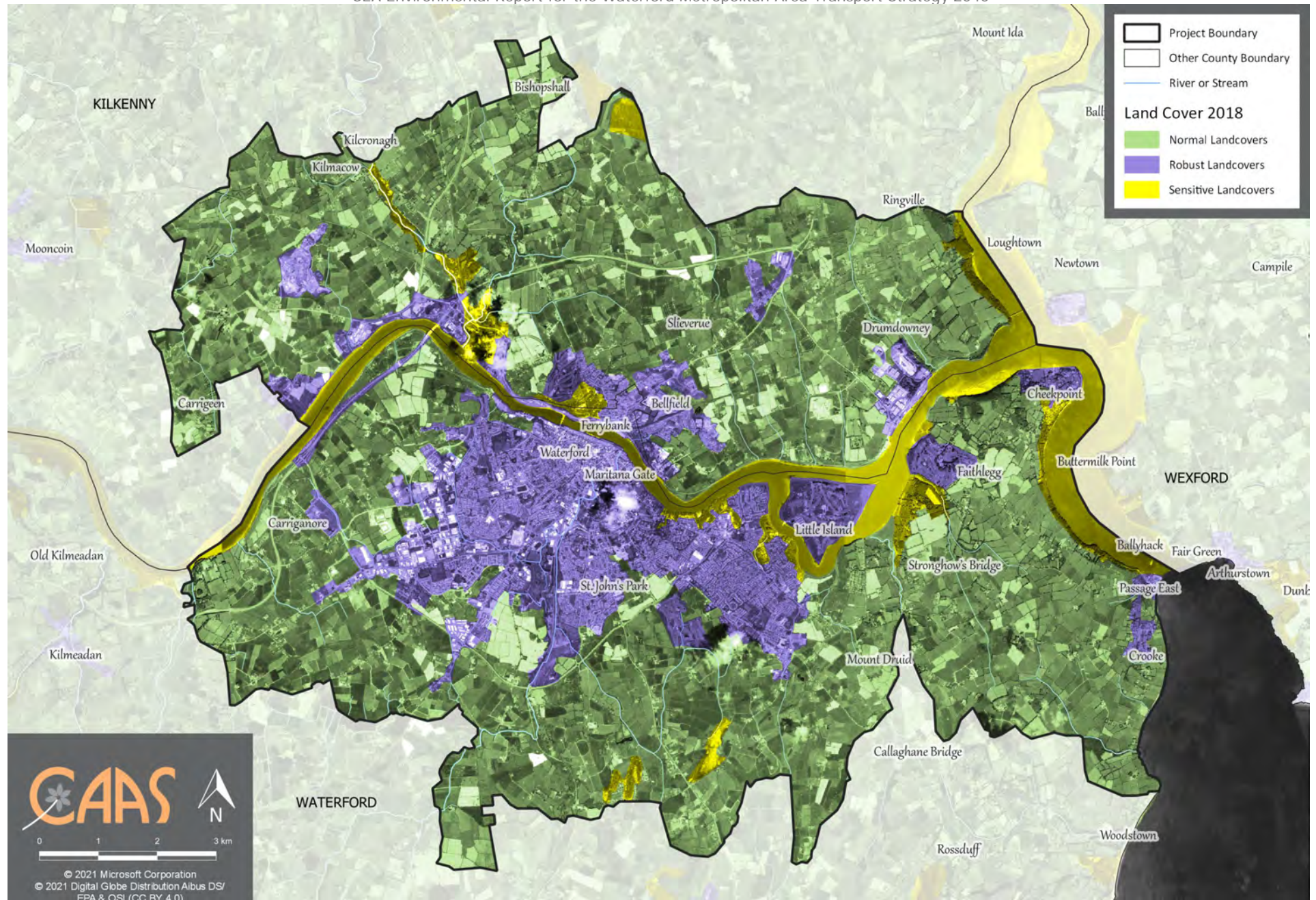


Figure 4.21 Potential Landcover Sensitivity Mapping

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4.12 Cultural Heritage

4.12.1 Archaeological Heritage

Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological deposits and underwater features.

Waterford is Ireland's oldest city and has a rich and significant archaeological heritage, with the largest collection of medieval urban defences in Ireland with six intact towers, and over 700m meters of wall. There are many sites of significant archaeological interest within the Strategy area (mapped on Figure 4.22), including the remains of a 9th century settlement in Woodstown along the River Suir - a unique and internationally important Viking site.

The European Convention on Protection of the Archaeological Heritage is known as the Valletta Convention of 1992. This was ratified by Ireland in 1997 and requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.

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. It is available from the National Monuments Service and at archaeology.ie.

The term 'monument' includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. All monuments in existence before 1700 A.D. are automatically considered to be historic monuments within the meaning of the Acts. Monuments of architectural and historical interest also come within the scope of the Acts. Monuments include: any artificial or

partly artificial building, structure or erection or group of such buildings, structures or erections; any cave, stone or other natural product, whether or not forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position; any, or any part of any, prehistoric or ancient tomb, grave or burial deposit, or, ritual, industrial or habitation site; and any place comprising the remains or traces of any such building, structure or erection, any such cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site, situated on land or in the territorial waters of the State', but excludes 'any building or part of any building, that is habitually used for ecclesiastical purposes' (National Monuments Acts 1930-2004).

A recorded monument is a monument included in the list and marked on the map which comprises the RMP set out county by county under Section 12 of the National Monuments (Amendment) Act, 1994 by the Archaeological Survey of Ireland. The definition includes Zones of Notification within which requirements for notifications of proposed works apply.

A Sites and Monuments Record (SMR)⁵³ is a manual containing a numbered list of all certain and possible monuments accompanied. An Urban Archaeology Survey was completed in 1995 and contained reports on historic towns dating to before 1700 A.D. with a view to delineating zones of archaeological potential (SMR Zones of Notification). The SMR formed the basis for issuing the RMP.

Figure 4.22 shows the spatial distribution of recorded monuments and associated SMR Zones of Notification within the Strategy area and beyond. There are hundreds of Recorded Monuments within the Strategy area, concentrated within urban/suburban areas. These are less common in areas which are not settled, most noticeably along the north-east of the Strategy area.

⁵³ The RMP was issued for each county between 1995 and 1998 in a similar format to the existing SMR. However, the RMP differs from the earlier lists in that, as defined in the Act, only monuments with known locations or places where there are believed to be monuments are included. The large archive and supporting database are managed by the National Monuments Service and the records are continually updated and supplemented as additional monuments are discovered. (<https://data.gov.ie/dataset/national-monuments-service-archaeological-survey-of-ireland>).

There are eight Monuments in State Care (four in State Ownership and four in State Guardianship)⁵⁴ within the Strategy area, mapped on Figure 4.22 and listed below:

- Granny Castle;
- Dunbrody Abbey;
- Gaulstown;
- Knockeen;
- Reginald's Tower;
- Ballyhack Castle;
- The French Church (Waterford); and
- Duncannon.

The Underwater Archaeology Unit was established within the National Monuments Service to manage and protect Ireland's underwater cultural heritage, including the quantification of the underwater resource and assessing development impacts in order to manage and protect this aspect of Ireland's heritage. The Shipwreck Inventory is principally a desktop survey with information gathered from a broad range of cartographic, archaeological and historical sources, both documentary and pictorial. Wrecks over 100 years old and archaeological objects found underwater are protected under the National Monuments (Amendment) Acts 1987 and 1994. Significant wrecks less than 100 years old can be designated by Underwater Heritage Order on account of their historical, archaeological or artistic importance. Such Orders can also be used to designate areas of seabed or land covered by water to more clearly define and protect wreck sites and archaeological objects. Under the legislation all diving on known protected wreck sites or with the intention of searching for underwater cultural heritage is subject to licensing requirements.

Rivers, estuaries and marine and coastal areas within and adjacent to the Strategy area may contain many features and finds associated with heritage such as shipwrecks, piers, quay walls, fords, stepping stones and associated archaeological objects and features.

4.12.2 Architectural Heritage

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning all: structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical,

archaeological, artistic, cultural, scientific, social, or technical interest.

Architecture within the Strategy area also includes industrial heritage associated with ship-building, agriculture, weaving, transportation, stone cutting processes and mining.

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. Entries from the Records of Protected Structures are identified in the relevant planning authority Development Plan and at myplan.ie.

In relation to a protected structure or proposed protected structure, the following are encompassed:

- (i) The interior of the structure;
- (ii) The land lying within the curtilage⁵⁵ of the structure;
- (iii) Any other structures lying within that curtilage and their interiors; and,
- (iv) All fixtures and features which form part of the interior or exterior of any structure or structures referred to in subparagraph (i) or (iii).

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 which 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. The ACA designation requires that planning permission must be obtained before significant works can be carried out to the exterior of a structure in the ACA which might alter the character of the

⁵⁴ This list of National Monuments in State care includes those which are in the ownership and guardianship of the Minister for the Environment, Heritage and Local Government.

⁵⁵ Curtilage is normally taken to be the parcel of ground immediately associated with the Protected Structure, or in use for the purposes of the structure. Protection extends to the buildings and land lying within the curtilage. While the curtilage sometimes coincides with the present property boundary, it can originally have included lands, features or even buildings now in separate ownership, e.g. the lodge of a former country house, or the garden features located in land subsequently sold off. Such lands are described as being attendant grounds, and the protection extends to them just as if they were still within the curtilage of the Protected Structure.

structure or the ACA. The ACA designations are identified in the relevant planning authority Development Plan.

The National Inventory of Architectural Heritage (NIAH) is a State initiative under the administration of the Department of Housing, Local Government and Heritage and was established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister of Culture, Heritage and the Gaeltacht to the local authorities for the inclusion of particular structures in their Record of Protected Structures. The NIAH includes historic gardens and designed landscapes.

Figure 4.23 shows entries to NIAH within the Strategy area and beyond. Similar to the general spatial spread of monuments, these are concentrated within urban/suburban areas (most notably within the Waterford city centre) and are less common in areas which are not settled.

4.12.3 Existing Problems

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

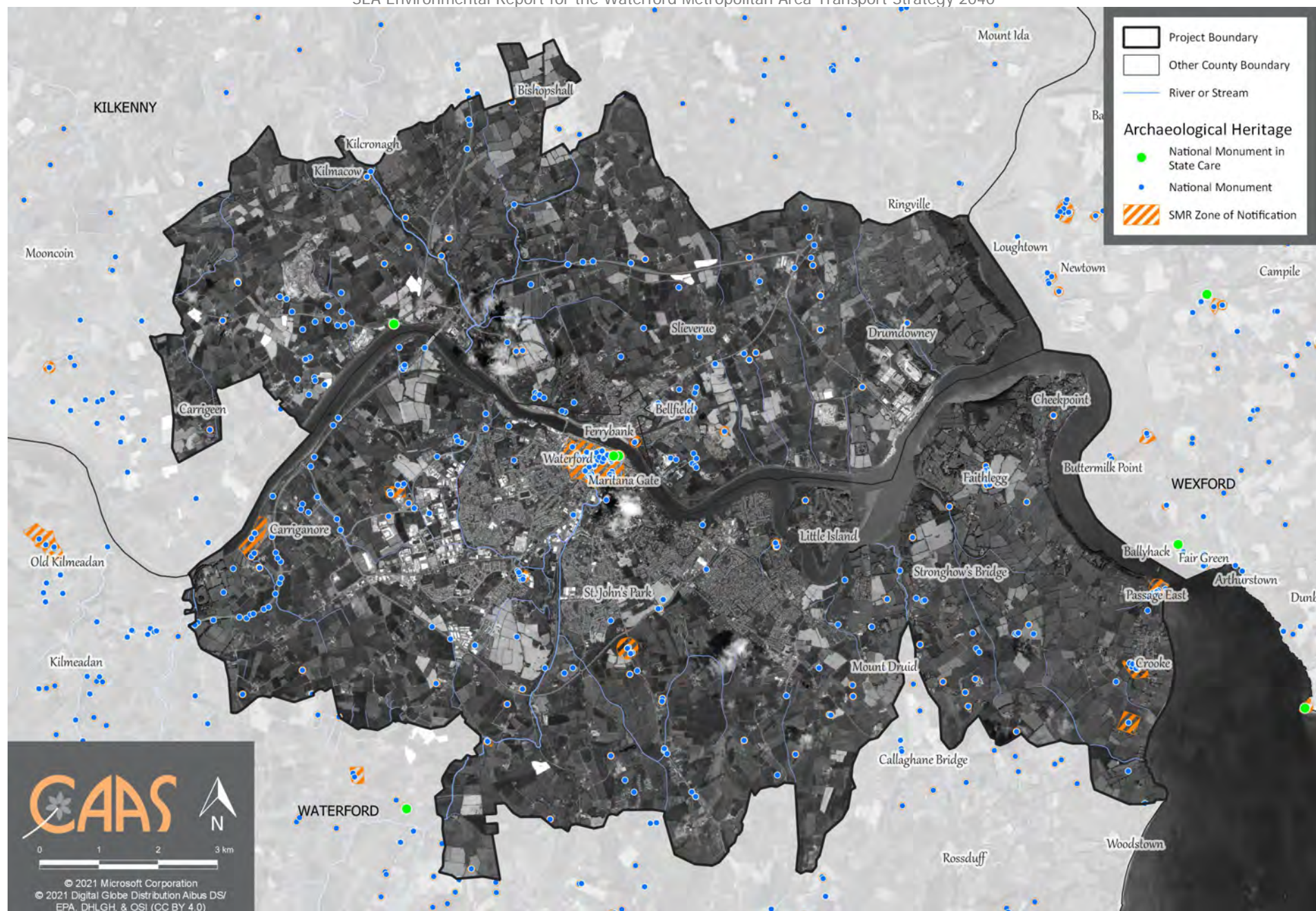


Figure 4.22 Archaeological Heritage



Figure 4.23 Architectural Heritage

4.12.4 Overall Environmental Sensitivities and Opportunities/Robustness

4.12.5 Overview

Some of the environmental information detailed under previous subsections has been weighted and mapped to show overall (potential) environmental sensitivity (see Figure 4.24) and overall potential environmental opportunities (see Figure 4.25) with regard to the development of transport projects. The purpose of the map is to indicate at a regional level where the main concentrations of sensitivities might occur.

The maps are prepared at the regional scale and different layers or weightings would produce different map outputs. Where the sensitivity mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration, if mitigation is not applied. It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the Strategy - will need to be adhered to at lower tiers of decision making in order to ensure that the implementation of the Strategy contributes towards environmental protection.

Where the robustness mapping shows a concentration of environmental robustness there is a decreased likelihood that development will conflict with the environment.

It is emphasised that the maps are high scale, regional maps and additional, local sensitivities and opportunities may become apparent during the consideration of projects at local level.

A weighting system applied through Geographical Information System (GIS) software was used in order to calculate sensitivity and robustness.

The maps have been prepared by weighting layers relating to environmental sensitivity and robustness and overlaying them using GIS

software. The layers and associated weightings are detailed on Table 4.3 and Table 4.4 below.

The EPA-funded Environmental Sensitivity Mapping Web Tool could assist in lower tier consideration of plans and projects.

4.12.6 Environmental Sensitivities

For the environmental sensitivity mapping shown on Figure 4.24, weightings were applied as per Table 4.3. On Figure 4.24, areas with higher environmental sensitivities are indicated by darker orange/red colours, areas with moderate environmental sensitivities are indicated by yellow colours and areas with lower environmental sensitivities are indicated with green colours.

Lower levels of sensitivity occur across most of the Strategy area. Heightened areas of sensitivity within the Strategy area include rivers, valleys, estuaries and transitional waters, chiefly those of the Rivers Suir and Barrow and their tributaries, on account of ecological designations, landscape sensitivities, areas of extreme groundwater vulnerability and flood risk. Heightened levels of sensitivity are also indicated within the central parts of the Waterford City, Maritanna Gate and Ferrybank on account of cultural heritage designations.

Table 4.3 Environmental Sensitivity Layers and Weighting

Layer	Weight
Any areas covered by SACs or SPAs (Figure 4.3)	10
Any areas covered by pNHAs or potential Annex I landcovers (Figure 4.5 and Figure 4.7)	5
Sensitive Landcovers (Figure 4.21)	10
County Geological Sites (Figure 4.12)	10
High Landslide Susceptibility (Figure 4.12)	10
Moderately High or Moderately High Inferred Landslide Susceptibility (Figure 4.12)	
OPW CFRAM/NIFM flood mapping	10
National Monuments in State Care with 80 m buffer, Recorded Monuments with 50 m buffer and SMR Zones of Notification, and entries to the National Inventory	10

Layer	Weight
of Architectural Heritage with 50 m buffer (Figure 4.22 and Figure 4.23)	
Highest Water Sensitivity (highest scores on Figure 4.16 from 30 to 50 inclusive)	15
Moderate Water Sensitivity (middle scores on Figure 4.16 from 15 to 25 inclusive)	10
Lowest Water Sensitivity (lowest scores on Figure 4.16 from 5 to 10 inclusive)	5

4.12.7 Environmental Opportunities/Robustness

For the environmental opportunities mapping shown on Figure 4.25, weightings were applied as per Table 4.4. On Figure 4.25, areas with higher environmental robustness are indicated by darker green colours, areas with moderate environmental robustness are indicated by yellow colours and areas with lower environmental robustness are indicated with red/pink colours.

Heightened areas of opportunities within the Strategy area include those associated with the existing built-up footprint of the City and its suburbs. Lower levels of robustness occur elsewhere.

Table 4.4 Environmental Opportunities/Robustness Layers and Weighting

Layer	Weight
Any areas not covered by SACs or SPAs (Figure 4.3)	10
Any areas not covered by pNHAs or potential Annex I landcovers (Figure 4.4)	10
Robust Landcovers (Figure 4.21)	10
Normal Landcovers (Figure 4.21)	5
Areas not susceptible to landslides (Figure 4.12)	10
Areas not covered by County Geological Sites (Figure 4.11)	10
National Monuments in State Care with 80 m buffer, Recorded Monuments with 50 m buffer and SMR Zones of Notification, and entries to the National Inventory of Architectural Heritage with 50 m buffer (Figure 4.22 and Figure 4.23)	10
Water Sensitivity High (lowest scores on Figure 4.16 from 5 to 10 inclusive)	5

Layer	Weight
Water Sensitivity Moderate (middle scores on Figure 4.16 from 15 to 25 inclusive)	10
Water Sensitivity Low (highest scores on Figure 4.16 from 30 to 40 inclusive)	15
Areas not prone to flooding (OPW CFRAM/NIFM flood mapping)	10
Population Density High (highest 4 intervals on Figure 4.2)	15
Population Density Moderate (middle 3 intervals on Figure 4.2)	10
Population Density Low (middle 3 intervals on Figure 4.2)	5

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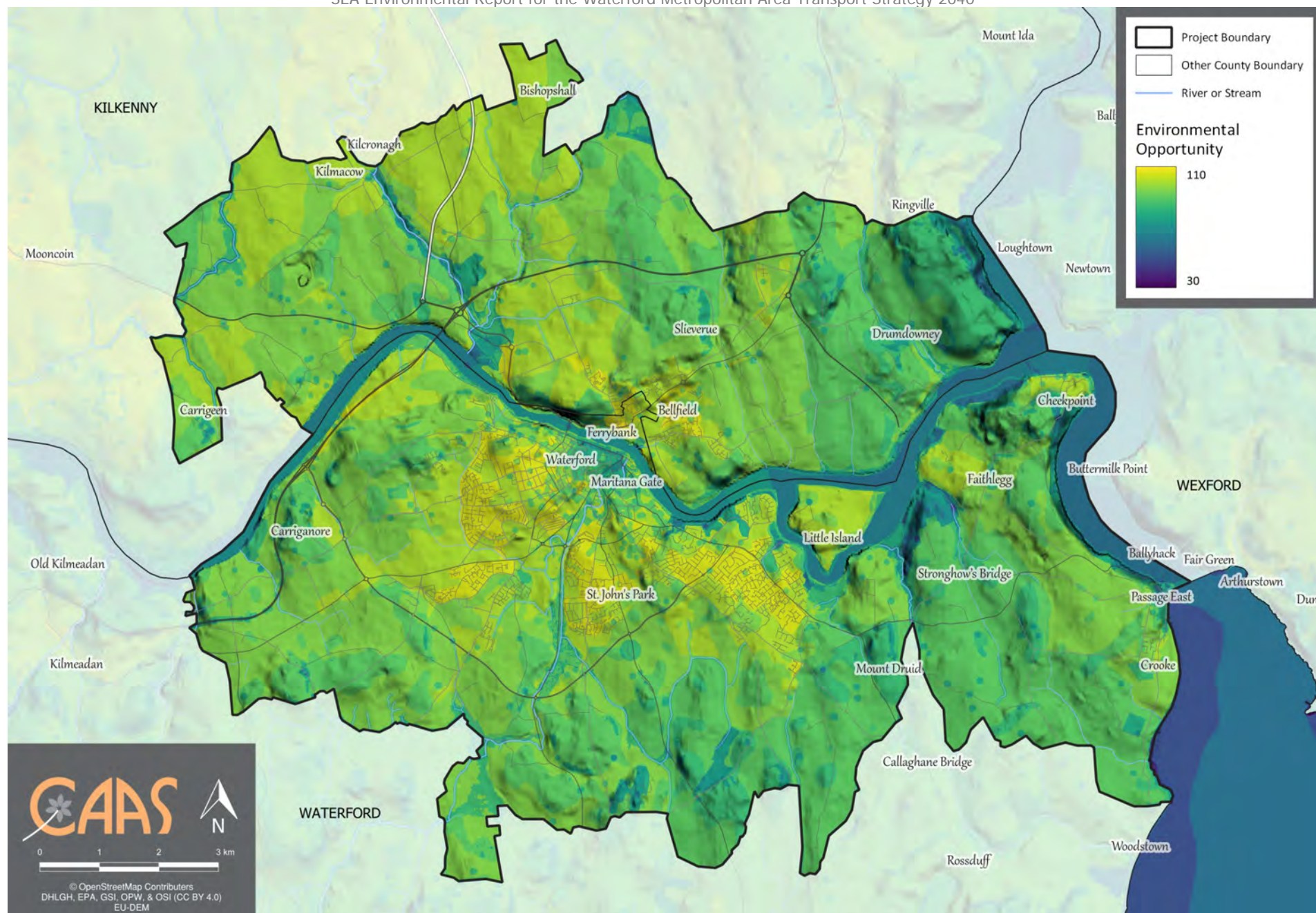


Figure 4.25 Overall Potential Environmental Opportunities

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Section 5 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level e.g. the environmental protection objectives of various European Directives which have been transposed into Irish law and which 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 Strategy 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.

The SEOs are linked to indicators which can facilitate monitoring the environmental effects of the Strategy as well identifying targets which the Strategy can help work towards.

Monitoring measures chosen for the SEA of the Strategy align with those used in the SEA of the Southern RSES and in the SEAs of other land use plans across the Region. This consistency across the hierarchy of land use/transport planning will improve the efficiency and effectiveness of future monitoring.

All SEOs, indicators and targets are provided on Table 5.1 overleaf while background to these measures is provided in the subsections below.

Further detail on legislation, plans and programmes are provided under Section 2 (and associated Appendix I "Relationship with Legislation and Other Plans and Programmes") and Section 4.

Table 5.1 Strategic Environmental Objectives, Indicators and Targets

Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives	Indicators	Targets
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 transport 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 and move closer to WHO recommended levels 	<ul style="list-style-type: none"> Proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring 	<ul style="list-style-type: none"> Decrease in proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter
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 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 	<ul style="list-style-type: none"> Implementation of the Strategy, which will contribute towards and facilitate climate action 	<ul style="list-style-type: none"> To implement the Strategy, which will contribute towards and facilitate climate action
				<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"> 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 Strategy
				<ul style="list-style-type: none"> Carbon dioxide (CO₂) emissions across the transport sector 	<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 transport sector
				<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 previous levels 	<ul style="list-style-type: none"> Decrease in the proportion of journeys made by residents of the WMA using private fossil fuel-based car compared to previous levels
				<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures

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Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives	Indicators	Targets
Population and Human Health	PHH	Improve quality of life for all ages and abilities based on high-quality, serviced, well connected and sustainable residential, working, educational and recreational environments	<ul style="list-style-type: none"> Promote economic growth to encourage retention of working age population and funding of sustainable development and environmental protection and management Ensure that existing population and planned growth is matched with the required public infrastructure and the required services Safeguard citizens from environment-related pressures and risks to health and well-being 	<ul style="list-style-type: none"> Implementation of the Strategy, which will contribute towards and facilitate economic growth 	<ul style="list-style-type: none"> To implement the Strategy, which will contribute towards and facilitate economic growth
				<ul style="list-style-type: none"> Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Strategy 	<ul style="list-style-type: none"> No spatial concentrations of health problems arising from environmental factors as a result of implementing the Strategy
				<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above previous CSO figures Access to sustainable modes of transport 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures To improve access to sustainable modes of transport
Biodiversity, Flora and Fauna	BFF	No net contribution to biodiversity losses or deterioration	<ul style="list-style-type: none"> To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species Enhance biodiversity in line with the National Biodiversity Strategy and its targets To protect, maintain and conserve natural capital 	<ul style="list-style-type: none"> Condition of European sites 	<ul style="list-style-type: none"> Relevant projects to integrate considerations relating to European sites, other nature conservation sites, ecological networks, protected species and ecosystem services Relevant projects to have regard to the heritage and biodiversity plans of planning authorities
				<ul style="list-style-type: none"> Number of projects that have integrated ecosystem services considerations 	
				<ul style="list-style-type: none"> EIAs and AAs as relevant for new projects 	<ul style="list-style-type: none"> Screen for and undertake EIA and AA as relevant for new projects
				<ul style="list-style-type: none"> Compliance of planning permissions with Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 17 of the Strategy 	<ul style="list-style-type: none"> For new projects only to be progressed where they demonstrate that they comply with all Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 17 of the Strategy
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 Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes 	<ul style="list-style-type: none"> See also indicator relating to the existing built-up footprint of settlements and urban areas under Soil Proportion of people reporting regular cycling / walking to school and work above previous CSO figures Access to sustainable modes of transport 	<ul style="list-style-type: none"> See also target relating to the existing built-up footprint of settlements and urban areas under Soil Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures To improve access to sustainable modes of transport
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 Safeguard areas of prime agricultural land and designated geological sites 	<ul style="list-style-type: none"> To facilitate population growth occurring within the existing built-up footprint of settlements and urban areas (also relevant to Material Assets) Instances where contaminated material generated from brownfield and infill must be disposed of 	<ul style="list-style-type: none"> To facilitate compliance with growth targets for delivery of housing within the existing built-up footprint of settlements and urban areas Dispose of contaminated material in compliance with EPA guidance and waste management requirements

Environmental Component	SEO Code	Guiding Principle	Strategic Environmental Objectives	Indicators	Targets
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 and Marine Strategy Framework Directive • Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • Integrate sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects 	<ul style="list-style-type: none"> • Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD • Number of incompatible developments permitted within flood risk areas • Integration of sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects 	<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 • Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk • Integrate sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects as relevant
Landscape	L	Protect and enhance the landscape character	<ul style="list-style-type: none"> • To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention 	<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 and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Strategy 	<ul style="list-style-type: none"> • No developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Strategy
Cultural Heritage	CH	Safeguard cultural heritage features and their settings through responsible design and positioning of development	<ul style="list-style-type: none"> • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage 	<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 Strategy 	<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 Strategy
				<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 Strategy 	<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 Strategy

Section 6 Description of Alternatives

6.1 Need for the Strategy

The Metropolitan Area Strategic Plan (MASP) for Waterford provides for the preparation of the preparation of the Waterford Metropolitan Area Transport Strategy 2040 (WMATS) through Policy Objective “Integration of Land Use and Transport” 6 (a):

“Prepare WMATS during the lifetime of this MASP and ensure investment and implementation of WMATS”.

6.2 Existing provisions already in place

The Strategy aligns with legislation and documents setting out public policy for land use, transport and climate action and will be incorporated into the review and preparation of these documents. These include the National Planning Framework (and associated National Development Plan), the Strategic Investment Framework for Land Transport, the National Investment Framework for Transport in Ireland, the Regional Economic and Spatial Strategy for the Southern Region (as adopted by the Southern Regional Assembly) and associated MASP, the City and County Development Plans, Local Area Plans and Planning Schemes. Certain transport related proposals already provided for by these documents (and considered by their environmental assessments) are amongst those included within the Strategy. This Transport Strategy is based on national policies on sustainability as set out in the Climate Action Plan and recent climate action legislation.

6.3 Overview of Alternatives Considered

The provision of an enhanced public transport network within the WMA is a key priority for the Strategy.

Six guiding principles for successful public transport networks were set out to help in the early development and assessment of options. The adoption of these principles will result in an attractive public transport service that provides a realistic alternative to the private car.

Key strategic public transport corridors (A, B, C, D and E&F) and supporting public transport services for the wider WMA were identified, underpinned by these principles. Once a high-level indicative public transport network was identified, more detailed analysis and specific considerations for the public transport network were addressed at a corridor level.

Within each specific corridor of the WMA, the public transport proposals were developed based on the identified public transport demand from the ‘idealised’ network analysis. Further details on the methodology employed can be found in the supporting Demand Analysis Report and Transport Options and Network Development Report.

The identification of the appropriate infrastructure to service the demand levels for each corridor was based on a typical range of public transport capacities that can be achieved by Bus, Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Heavy Rail.

With respect to the walking, cycle and road networks:

- The Walking Network in the Strategy focuses on the existing and proposed Development Plans and Local Area Plans from both Local Authorities. These plans were reviewed to enhance integration and connectivity with the measures for the cycle, public transport and road network.
- The Cycle Network in the Strategy is fundamentally based on the proposals

contained within the Draft Cycle Network Plan for Waterford City and Environs 2014. This Cycle Plan was reviewed to ensure integration with the proposals for public transport, walking and roads within the Strategy.

- A review of committed and proposed road schemes was undertaken as part of the Strategy development and aligned to policy within the WMA. The road network was also reviewed with the aim of supporting new public transport, walking and cycling provision.

The following Public Transport Network Options were considered for each of the Public Transport Corridors (A, B, C, D and E&F):

- Option 1: Bus Services;
- Option 2: Bus Rapid Transit;
- Option 3: Light Rail Transit; and
- Option 4: Suburban Rail.

Section 7 Evaluation of Alternatives

7.1 Introduction

This section provides a comparative evaluation of the environmental effects of implementing the alternatives that are detailed under Section 6. This determination sought to understand whether each alternative was likely to improve, conflict with or have a neutral interaction with environmental components.

The Public Transport Network Options for each corridor have been assessed⁵⁸ relative to each other under the following five criteria using the Multi-Criteria Assessment Rating Key provided at Table 7.3:

- Economy
- Environment
- Safety
- Integration
- Accessibility and Social Inclusion

7.2 Methodology

The relevant aspects of the current state of the environment (see Section 4) and the Strategic Environmental Objectives (see Section 5 and Table 7.1) are used in the evaluation of alternatives.

The alternatives are evaluated using compatibility criteria (see Table 7.2) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the alternatives are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to contribute towards compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species'⁵⁶.

The interactions identified are reflective of likely significant environmental effects⁵⁷.

The degree to which effects can be determined is limited as the Strategy will be implemented through the lower tier environmental assessments and decision making of planning authorities and An Bord Pleanála. Nonetheless a comparative evaluation of the various alternatives can be provided.

⁵⁶ 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

⁵⁷ These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

⁵⁸ More detail on the findings of the Multi-Criteria Assessment Rating can be found in the "Waterford Metropolitan Area Transport Strategy Transport Options and Network Development Report, December 2021"

Table 7.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Strategic Environmental Objectives
Air	A	<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 transport 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 and move closer to WHO recommended levels
Climatic Factors	C	<ul style="list-style-type: none"> To minimise emissions of greenhouse gasses Integrate sustainable design solutions into 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
Population and Human Health	PHH	<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 citizens from environment-related pressures and risks to health and well-being
Biodiversity, Flora and Fauna	BFF	<ul style="list-style-type: none"> To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species Enhance biodiversity in line with the National Biodiversity Strategy and its targets To protect, maintain and conserve natural capital
Material Assets	MA	<ul style="list-style-type: none"> Optimise existing infrastructure and provide new infrastructure to match population distribution proposals Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes
Soil (and Land)	S	<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 Safeguard areas of prime agricultural land and designated geological sites
Water	W	<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 and Marine Strategy Framework Directive Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas Integrate sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects
Landscape	L	<ul style="list-style-type: none"> To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention
Cultural Heritage	CH	<ul style="list-style-type: none"> Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage

Table 7.2 Criteria for appraising the effect of Alternatives on SEOs

Likely to Improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
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Table 7.3 Multi-Criteria Assessment Rating Key for Public Transport Network Options

Colour	Relative Performance
Dark Green	Significant advantages over other options
Light Green	Some advantages over other options
Yellow	Comparable with other options
Orange	Some disadvantages over other options
Red	Significant disadvantages over other options

7.3 Cumulative Effects

Cumulative effects are one of the types of effects which have been considered by the assessment. Cumulative effects can be described as the addition of many small impacts to create one larger, more significant, impact.

There are 2 types of cumulative effects that have been considered, namely:

- *Intra-Plan* cumulative effects - these arise from the interactions between different types of environmental effects resulting from a plan, programme, etc. The interrelationships between environmental components that help determine these effects are identified on Table 8.4 e.g. interrelationships between: human health and air quality; human health and water quality; air quality and vegetation; human health and flood risk; and ecology and water quality. Effects that have been identified by the assessment (see Table 8.4) include those which are interrelated; implementation of the Strategy will not affect the interrelationships between these components.
- *Inter-Plan* cumulative effects - these arise when the effects of the implementation of one plan occur in combination with those of other plans, programmes, projects, etc. With regard to potential *inter-Plan* cumulative environmental effects, these occur as a result of the combination of: environmental effects which are identified by the assessment; and the effects arising from other policies, plans and programmes.

Other legislation, plans, programmes or developments that have been considered by the assessment of environmental effects include those which are detailed under Section 2.4 "Relationship with other relevant Plans and Programmes", Section 3.2 "Hierarchy of Planning and Environmental Assessment", Section 4 "Relevant aspects of the current state of the Environment", Section 5 "Strategic Environmental Objectives", Section 9 "Mitigation Measures" and Appendix I "Relationship with Legislation and Other Plans and Programmes".

Policies, plans and programmes from various sectors will interact with the Strategy, including those relating to transport and land use planning. These other actions are subject to their own environmental assessment requirements (SEA, EIA, AA and FRA), as relevant, and already provide for various measures that have been compiled into the Strategy. Examples include:

- Transport and/or Land Use (e.g. National Planning Framework and associated National Development Plan, the Southern Regional Spatial and Economic Strategy, Statutory land use plans of planning authorities and the Integrated Implementation Plan);
- Water services, waste management and energy infrastructure (e.g. Irish Water's Water Services Strategic Plan and associated Capital Investment Plan and Regional Waste Management Plans); and
- Environmental protection and management (e.g. River Basin Management Plan 2018-2021, National Mitigation Plan 2017, National Adaptation Framework 2018, Climate Action Plan 2021 and Flood Risk Management Plans).

Potential cumulative/in-combination effects include:

- Contributions towards management of traffic and a shift from motorised transport modes to more sustainable and non-motorised transport modes, in combination with plans and programmes from various sectors, including transport and land use planning.
- Contributions towards reductions in greenhouse gas and other emissions to air and associated achievement of legally binding targets (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of facilitating:
 - A shift from car to more sustainable and non-motorised transport mode;
 - A transition to lower emission vehicles for transport use; and
 - More consolidated urban areas and reductions in sprawl.

- Contributions towards in travel related greenhouse gas and other emissions to air (in combination with plans and programmes from all sectors, including transport and land use planning) as a result of facilitating transport infrastructure and services. This has been mitigated by provisions which have been integrated into the Strategy, including those relating to sustainable mobility.
- Contributions towards energy security and reductions in energy usage (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of facilitating:
 - A shift from car to more sustainable and non-motorised transport mode;
 - A transition to lower emission vehicles for transport use; and
 - More consolidated urban areas and reductions in sprawl.
- Contributions towards the enhancement of cultural heritage (archaeological and architectural) and its context in urban areas and their surrounds (in combination with the provisions of land use plans that have undergone SEA), as a result of replacing motorised transport modes with more sustainable and non-motorised modes such as walking, cycling and light rail.
- Potential effects on all environmental components arising from the construction of new transport related development (in combination with all development arising from plans and programmes from all sectors). The type of these effects are consistent with those described on Table 7.4.

The SEA undertaken for the Strategy has taken account of the need for the implementation of the Strategy to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management. In considering cumulative effects, the EPA's (2020) "Good Practice Guidance Note on Cumulative Effects Assessment in Strategic Environmental Assessment" has been taken into account.

7.4 Detailed Evaluation of Alternatives

7.4.1 Effects common to all alternatives

The environmental effects detailed on Table 7.4 would be present to varying degrees as a result of the construction and operation of development under the different alternatives.

Table 7.4 Effects common to all Alternatives

Environmental Component	SEO Code	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated
Air and climatic factors	AC	<ul style="list-style-type: none"> Contributions towards reductions in greenhouse gas and other emissions to air and associated achievement of legally binding targets (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of: facilitating a shift from car to more sustainable and non-motorised transport modes; and facilitating more consolidated urban areas and reductions in sprawl. Contributions towards reductions in consumption from non-renewables and associated achievement of legally binding renewable energy targets, including sectoral targets for transport (in combination with plans and programmes from all sectors, including energy, transport and land use planning). Contributions towards managing traffic flows (and associated management of adverse effects as a result of traffic on air quality and noise levels). 	<ul style="list-style-type: none"> Emissions to air and associated issues.
Population and human health	PHH	<ul style="list-style-type: none"> Provides for the development of transport infrastructure and services in locations which will facilitate use by those living and working in urban/suburban areas. Facilitates contribution towards the protection of human health as a result of contributing towards the protection of environmental vectors, especially air. 	<ul style="list-style-type: none"> Potential interactions if effects upon environmental vectors such as air are not mitigated.
Biodiversity and flora and fauna	BFF	<ul style="list-style-type: none"> Facilitates lower overall effects on ecology (including designated sites, ecological connectivity and habitats) – due to increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites. Contributes towards the protection of vegetation as a result of contributing towards the protection of environmental vectors, especially air. Potential ecological enhancement interventions along transport corridors. 	<ul style="list-style-type: none"> Arising from both construction and operation of transport infrastructure and services and associated facilities/ infrastructure: loss of/damage to biodiversity in designated sites, 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. Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species and/or coastal squeeze. Effects in riparian zones where new crossings of waters are progressed. Potential effects on vegetation from transport emissions.

Environmental Component	SEO Code	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated
Material Assets	MA	<ul style="list-style-type: none"> Contributions towards energy security (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of reducing traffic flows and associated energy use. Contributions towards a mode shift away from the private car to public transport, walking and cycling and associated enhancement of the public realm. Contributions towards the protection of built/amenity assets and infrastructure. Contributions towards the reuse and regeneration of brownfield lands thereby contributing towards a higher efficiency of land utilisation, sustainable mobility and a reduction in the need to develop greenfield lands. By facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites there will be lower adverse effects upon ecology, landscape designations, architectural and archaeological heritage and soil. Contributions towards appropriate waste management. 	<ul style="list-style-type: none"> Generation of construction waste. Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure.
Water	W	<ul style="list-style-type: none"> Contributions towards lower effects on ground and surface waters due to higher levels of development within established and serviced settlement centres that have installed/upgraded water services capable of delivering Water Framework Directive targets. Contributions towards compliance with the Flood Risk Management Guidelines. 	<ul style="list-style-type: none"> Adverse impacts upon the status of water bodies and entries to the WFD Register of Protected Areas, arising from changes in quality, flow and/or morphology. Increase in the risk of flooding.
Landscape	L	<ul style="list-style-type: none"> Contributions towards the protection of landscape designations as a result of facilitating compliance with relevant plans. 	<ul style="list-style-type: none"> Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape.
Cultural Heritage	CH	<ul style="list-style-type: none"> Contributions towards the protection of cultural heritage (archaeological and architectural) as a result of facilitating compliance with relevant legislation. Contributions towards the enhancement of cultural heritage and its context in urban areas and their surrounds as a result of replacing motorised modes with more sustainable and non-motorised modes of transport such as walking and cycling. 	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities, including as a result of increasing traffic flows.
Soil	S	<ul style="list-style-type: none"> Minimises land-take and loss of extent of soil resource – as a result of facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites. Contributions towards the protection of the environment from contamination arising from brownfield development. Contributions towards the protection of features or areas of geological/geomorphological interest. 	<ul style="list-style-type: none"> Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of transport and associated transport facilities/infrastructure. Adverse impacts on features or areas of geological/geomorphological interest as a result of construction of transport and associated transport facilities/infrastructure. Potential for increase in coastal/river bank erosion.

Each of the alternatives would help to contribute towards meeting the various Strategy challenges, with varying degrees of success. These challenges are detailed in the Strategy and comprise:

- Land Use and Physical Constraints
- Travel Behaviour
- Public Transport Provision
- Congestion and Economy
- Public Health and Deprivation

7.4.2 Corridor Options

The following options for **Public Transport Corridors A, B, C, D and E&F** are assessed on the following tables against the five criteria using the Multi-Criteria Assessment Rating Key (see Table 7.3) and against the Strategic Environmental Objectives:

- Option 1: Bus Services;
- Option 2: Bus Rapid Transit;
- Option 3: Light Rail Transit; and
- Option 4: Suburban Rail.

The options selected for the Strategy and the reasons for their selection are detailed on Table 7.15.

Table 7.5 Corridor A Public Transport Options - Multi-Criteria Assessment

	Economy	Environment	Safety	Integration	Accessibility and Social Inclusion
Option 1: Bus Services	Corridor A generates the largest demand of 1,684 passengers. The bus capacity demand levels (Figure 3-1) indicates that this demand level can be accommodated within the bus capacity (up to 2,000 pax/hr/dir). With the bus corridors utilising the existing road infrastructure (with some localised widening) this will make the best use of investment in the current network and could provide a greater return on investment, in terms of benefit to cost ratio.	Bus-based network on Corridor A will be able to utilise existing road space, reducing the construction environmental impact. Bus-based network produces less GHG than the private car alternative. Options are available for different fuel sources.	High frequency bus corridors and priority for bus travel would reduce the number of cars in use and therefore would likely have a direct impact on collision rate. The improved bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support segregated active travel modes will further contribute to improved user safety across the network.	An improved integrated bus network can connect with University Hospital, Ardkeen Shopping Centre, residential areas of Dunmore Road and Williamstown Road and the City. A high frequency service corridor with city centre connections and direct cross-city connections (other bus corridors) can access bus station, rail station and potential P&R sites.	An integrated high frequency and well-connected bus network can improve the accessibility and social inclusion to users and the flexible network can access most areas even with network constraints.
Option 2: Bus Rapid Transit	Given the idealised demand is across several roads/routes within corridor A, it is unlikely that a BRT service along a direct route would reach the capacity of between 1,000 and 4,000 pax/hr/dir. Though it is acknowledged that the demand on Corridor A could be potentially accommodated by the BRT. Although the BRT route would mainly utilise the current road highway at this stage of the design the BRT option would provide some return on investment, it will unlikely provide the same value for money, as the Bus Service Option.	BRT will likely have some impact on the surrounding environment, to accommodate route/junction widening, bus priority measures, BRT swept paths and to improve the permeability of the service. Similar to the Bus Service option, the BRT produces less GHG than a private car alternative. Options are also available for different fuel sources.	High frequency BRT corridors and priority for bus travel would reduce the number of cars in use and therefore would likely have a direct impact on collision rate. Similar to the Bus Service Option bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved user safety across the network.	Integration with other services and land-use is limited due to the proposed routing location of the BRT network along the corridor. One direct corridor is likely to be only served by BRT restricting its integration across the wider Corridor A area. The BRT (comparable with the light and rail routes) is unable to penetrate and integrate with the same number of routes as the bus services.	Potentially enhances accessibility. BRT will be restricted to a direct corridor mainly. Access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access the BRT service.
Option 3: Light Rail Transit	The travel demand (1684 passengers) on Corridor A is well below the design capacity of between 3,000 and 7,000 pax/hr/dir for Light Rail. Therefore, it is unlikely that Light Rail would provide value for money given construction costs. Significant costs also associated with operation.	Environmental impacts in terms of construction will be significant, particularly within the city core where land and building take will be required. Potentially produces less GHG than private car alternative, though Bus and BRT offers same advantages.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. However, Light Rail will have an impact on safety as its route will sever corridors and divide the city core, introducing conflicts at crossings and junctions for cars and active travel users.	Integration with other services and land-use is limited due to the proposed routing location of the Light Rail network along specific direct routes only. The Light Rail (comparable with rail and BRT routes) is unable to penetrate and integrate with the same number of routes as the bus services.	Potentially enhances accessibility. However, access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.
Option 4: Suburban Rail	Travel demand on Corridor A (1684 passengers) is significantly below the design capacity of 5,000 pax/hr/dir for Heavy Rail. Heavy Rail on Corridor A would result in significant costs that are associated with the construction, land acquisition and operation of Heavy Rail.	Environmental impacts in terms of construction, particularly within the existing urban footprint and on a designated rail crossing bridge. This construction impact is further emphasised due to the lack of presence of Heavy Rail in this area. Potentially produces less GHG than private car alternative but does not offer any benefits over the other options.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. The impact of Heavy Rail on Corridor A will have an impact on safety due to the severance and increased conflicts it would result in if constructed.	Integration with other services and land-use is limited to the proposed routing location of the Heavy Rail network along the corridor. Heavy Rail would require a designated rail crossing across the River Suir to integrate with Plunkett Station.	Enhances accessibility for those living along potential rail routes but has limited flexibility in serving other areas not on the route corridor.

Table 7.6 Corridor A Options - Comparative Evaluation of Corridor Options against SEOs

Alternative	Likely to Improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
Option 1: Bus Services	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.5. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>	A C PHH BFF MA S W L CH - as the bus-based network on this corridor under Option 1 Bus Services would be able to utilise existing road space, potential adverse direct environmental effects would be least under this option.	A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		
Option 2: Bus Rapid Transport	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.5. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p> <p>A C PHH BFF MA S W L CH - Option 2 BRT would have a present a greater extent of potential adverse direct environmental effects in comparison to the bus services under Option 1, as Option 2 BRT would need more works and land to accommodate bus priority measures, junction widening and improved permeability.</p>		
Option 3: Light Rail Transit	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.5. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.	A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be elevated under Option 3 Light Rail Transit due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.	
Option 4: Suburban Rail	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.5. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be most under Option 4 Suburban Rail due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.

Table 7.7 Corridor B Options Multi-Criteria Assessment

	Economy	Environment	Safety	Integration	Accessibility and Social Inclusion
Option 1: Bus Services	Corridor B generates a demand of 754. The bus capacity demand levels (Figure 3-1) indicates that this demand level can be accommodated within the bus capacity (up to 2,000 pax/hr/dir). With the bus services utilising the existing road infrastructure (with some localised widening) this will make the best use of investment on the current network and could provide a greater return on investment, in terms of the benefit to cost ratio.	A bus-based network on Corridor B will be able to utilise existing road space, reducing the need for significant construction works and reducing any associated environmental impacts. A bus-based network produces less GHG than the private car alternative. Options are also available for different fuel sources.	High frequency bus corridors and priority for bus travel will reduce the volume of cars along the corridor and therefore would likely have a direct impact on the collision rate. The improved bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support segregated active travel modes will further contribute to improved safety across the network.	An improved integrated bus network can connect with residential areas of Kilcohan, Ballytruckle and Killure Road, as well as Waterford Primary Care Centre. The bus services can access wider areas of the city. A high frequency service corridor to city centre can access public transport interchanges - bus station and rail station.	An integrated bus network can improve the accessibility and social inclusion to users and provide access to areas not easily served by more infrastructure intensive modes.
Option 2: Bus Rapid Transit	Demand levels on Corridor B are below the proposed capacity of between 3,000 and 4,000 pax/hr/dir for BRT. Therefore, it is unlikely that BRT would provide value for money, given the construction and operation costs.	The BRT will likely have some impact on the surrounding environment, to accommodate bus priority measures, junction widening and to improve the permeability of the service. Similar to Bus Service Option, this option produces less GHG than private car alternative. Also, BRT options available for different fuel sources.	A high frequency BRT corridors and priority would reduce the likely number of cars in use and therefore would likely reduce the potential accident rate. Similar to the Bus Service option upgraded infrastructure and better use of road space for segregated active travel modes will further contribute to improved safety.	Integration with other services and land-use is limited due to the proposed routing location of the BRT network along the corridor. One direct corridor is likely to be only served by BRT restricting its integration across the wider Corridor B area.	Potentially enhances accessibility. BRT will be restricted to a direct corridor mainly. Access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.
Option 3: Light Rail Transit	The travel demand on Corridor B is well below the capacity of between 3,000 and 7,000 pax/hr/dir for Light Rail. Therefore, it is unlikely that Light Rail would provide value for money given construction costs. Significant costs also associated with operation.	Environmental impacts in terms of construction, particularly within the city where significant land take may be required. Potentially produces less GHG than private car alternative, though Bus and BRT offers same advantages.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. However Light Rail will have impact on safety as its route will sever corridors and city centre, introducing more conflicts at crossings and junctions for cars and active travel users.	Integration with other services and land-use is limited to the proposed routing location of the Light Rail network along specific corridors. The Light Rail (comparable with rail and BRT routes) is unable to penetrate the same number of routes as a bus.	Potentially enhances accessibility. However, access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.
Option 4: Suburban Rail	Travel demand on Corridor B is significantly below the capacity of 5,000 pax/hr/dir for Heavy Rail. Heavy Rail on Corridor B would result in significant costs that are associated with the construction, land acquisition and operation of Heavy Rail.	Environmental impacts in terms of construction, particularly within existing urban footprint and on a designated rail crossing bridge. This construction impact is further emphasised due to the lack of presence of Heavy Rail in this area. Potentially produces less GHG than private car alternative but does not offer any benefits over the other options.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. The impact of Heavy Rail on Corridor B will have significant impact on safety due to the severance and increased conflicts it would result in if constructed.	Integration with other services and land-use is limited to the proposed routing location of the Heavy Rail network along the corridor. Heavy Rail would require a designated rail crossing across the River Suir to integrate with Plunkett Station.	Enhances accessibility for those living along potential rail routes but has limited flexibility in serving other areas not on the corridor.

Table 7.8 Corridor B Options - Comparative Evaluation of Corridor Options against SEOs

Alternative	Likely to improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
Option 1: Bus Services	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.7. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>	A C PHH BFF MA S W L CH - as the bus-based network on this corridor under Option 1 Bus Services would be able to utilise existing road space, potential adverse direct environmental effects would be least under this option.	A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		
Option 2: Bus Rapid Transport	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.7. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p> <p>A C PHH BFF MA S W L CH - Option 2 BRT would have a present a greater extent of potential adverse direct environmental effects in comparison to the bus services under Option 1, as Option 2 BRT would need more works and land to accommodate bus priority measures, junction widening and improved permeability.</p>		
Option 3: Light Rail Transit	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.7. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.	A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be elevated under Option 3 Light Rail Transit due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.	
Option 4: Suburban Rail	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.7. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be most under Option 4 Suburban Rail due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.

Table 7.9 Corridor C Options Multi-Criteria Assessment

	Economy	Environment	Safety	Integration	Accessibility and Social Inclusion
Option 1: Bus Services	<p>The highest demand generated in Corridor C is 881.</p> <p>The bus capacity demand levels (Figure 3-1) indicates that this demand level can be accommodated within the bus capacity (up to 2,000 pax/hr/dir).</p> <p>With the bus corridors utilising the existing road infrastructure (with some localised widening) this will make the best use of investment in the current network and could provide a greater return on investment, in terms of benefit to cost ratio.</p>	<p>Bus-based network on Corridor C will be able to utilise existing road space, reducing the construction impact.</p> <p>Bus-based network produces less GHG than the private car alternative. Options are available for different fuel sources.</p>	<p>High frequency bus corridors and priority for bus travel would reduce the number of cars in use and therefore would likely reduce the potential accident rate.</p> <p>The improved bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved safety.</p>	<p>Better integrated bus network can connect with Waterford Institute of Technology, Waterford IDA, Boland's Retail Park, Six Crossroads Business Park, as well as residential areas of Ballybeg, Lacken and St. Paul's. Services can access wider areas of the city.</p> <p>Services can access wider areas of the city. A high frequency service corridor with city centre connections and cross-city connections can access bus station, rail station and potential P&R sites.</p>	<p>An integrated bus network can improve the accessibility and social inclusion to users and provide access to areas not easily served by more infrastructure intensive modes</p>
Option 2: Bus Rapid Transit	<p>Demand levels on Corridor C are below the proposed capacity of between 3,000 and 4,000 pax/hr/dir for BRT. Therefore, it is unlikely that BRT would provide value for money, given the construction and operation costs.</p>	<p>BRT will likely have some impact on the surrounding environment, to accommodate bus priority measures and to improve the permeability of the service.</p> <p>Similar to Bus Service Option Produces less GHG than private car alternative. Options available for different fuel sources.</p>	<p>A high frequency BRT corridors and priority would reduce the likely number of cars in use and therefore would likely reduce the potential accident rate.</p> <p>Similar to the Bus Service Option upgraded infrastructure and better use of road space for active travel modes will further contribute to improved safety.</p>	<p>Integration with other services and land-use is limited due to the proposed routing location of the BRT network along the corridor.</p> <p>One direct corridor is likely to be only served by BRT restricting its integration across the wider Corridor C area.</p>	<p>Potentially enhances accessibility. BRT will be restricted to a direct corridor mainly. Access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.</p>
Option 3: Light Rail Transit	<p>The travel demand on Corridor C is well below the capacity of between 3,000 and 7,000 pax/hr/dir for Light Rail. Therefore, It is unlikely that Light Rail would provide value for money given construction costs. Significant costs also associated with operation.</p>	<p>Environmental impacts in terms of construction, particularly within the city where significant land take may be required.</p> <p>Potentially produces less GHG than private car alternative, though Bus and BRT offers same advantages.</p>	<p>Higher safety rate than car mode due to dedicated infrastructure segregating from other road users.</p> <p>However Light Rail will have impact on safety as its route will sever corridors and city centre, introducing more conflicts at crossings and junctions for cars and active travel users.</p>	<p>Integration with other services and land-use is limited to the proposed routing location of the Light Rail network along specific corridors.</p> <p>The Light Rail (comparable with rail and BRT routes) is unable to penetrate and integrate with the same number of routes as a bus.</p>	<p>Potentially enhances accessibility. However, access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.</p>
Option 4: Suburban Rail	<p>Travel demand on Corridor C is significantly below the capacity of 5,000 pax/hr/dir for Heavy Rail. Heavy Rail on Corridor C would result in significant costs that are associated with the construction, land acquisition and operation of Heavy Rail.</p>	<p>Environmental impacts in terms of construction, particularly within existing urban footprint and on a designated rail crossing bridge. This construction impact is further emphasised due to the lack of presence of Heavy Rail in this area.</p> <p>Potentially produces less GHG than private car alternative but does not offer any benefits over the other options.</p>	<p>Higher safety rate than car mode due to dedicated infrastructure segregating from other road users.</p> <p>The impact of Heavy Rail on Corridor C will have significant impact on safety due to the severance and increased conflicts it would result in if constructed.</p>	<p>Integration with other services and land-use is limited to the proposed routing location of the Heavy Rail network along the corridor.</p> <p>Heavy Rail would require a designated rail crossing across the River Suir to integrate with Plunkett Station.</p>	<p>Enhances accessibility for those living along potential rail routes but has limited flexibility in serving other areas not on the corridor.</p>

Table 7.10 Corridor C Options - Comparative Evaluation of Corridor Options against SEOs

Alternative	Likely to Improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
Option 1: Bus Services	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.9. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>	A C PHH BFF MA S W L CH - as the bus-based network on this corridor under Option 1 Bus Services would be able to utilise existing road space, potential adverse direct environmental effects would be least under this option.	A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		
Option 2: Bus Rapid Transport	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.9. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p> <p>A C PHH BFF MA S W L CH - Option 2 BRT would have a present a greater extent of potential adverse direct environmental effects in comparison to the bus services under Option 1, as Option 2 BRT would need more works and land to accommodate bus priority measures, junction widening and improved permeability.</p>		
Option 3: Light Rail Transit	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.9. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.	A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be elevated under Option 3 Light Rail Transit due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.	
Option 4: Suburban Rail	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.9. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be most under Option 4 Suburban Rail due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.

Table 7.11 Corridor D Options Multi-Criteria Assessment

	Economy	Environment	Safety	Integration	Accessibility and Social Inclusion
Option 1: Bus Services	<p>Corridor D generates the demand of 1,246.</p> <p>The bus capacity demand levels (Figure 3-1) indicates that this demand level can be accommodated within the bus capacity (up to 2,000 pax/hr/dir).</p> <p>With the bus corridors utilising the existing road infrastructure (with some localised widening) this will make the best use of investment in the current network and could provide a greater return on investment, in terms of benefit to cost ratio.</p>	<p>Bus-based network on Corridor D will be able to utilise existing road space, reducing the construction impact.</p> <p>Bus-based network produces less GHG than the private car alternative. Options are available for different fuel sources.</p>	<p>High frequency bus corridors and priority for bus travel would reduce the number of cars in use and therefore would likely reduce the potential accident rate.</p> <p>The improved bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved safety.</p>	<p>Better integrated bus network can connect with WIT West Campus, Waterford IDA and Bilberry Industrial Estate, along with housing estates in Carrickphierish, Gracedieu, Tycor and Lismore Lawn. Bus-based services can access wider areas of the city.</p> <p>Services can access wider areas of the city. A high frequency service corridor with city centre connections and cross-city connections can access bus station, rail station and potential P&R sites.</p>	<p>An integrated bus network can improve the accessibility and social inclusion to users and provide access to areas not easily served by more infrastructure intensive modes</p>
Option 2: Bus Rapid Transit	<p>Given the idealised demand is across several roads/routes, it is unlikely that a BRT would reach the capacity of between 1,000 and 4,000 pax/hr/dir. Though the demand could be accommodated by the BRT.</p> <p>Although the BRT route would mainly utilise the current road highway at this stage of the design the BRT option would provide some return on investment, though it will unlikely provide the same value for money, as the Bus Service Option.</p>	<p>BRT will likely have some impact on the surrounding environment, to accommodate bus priority measures and to improve the permeability of the service.</p> <p>Similar to Bus Service Option Produces less GHG than private car alternative. Also, options available for different fuel sources.</p>	<p>High frequency BRT corridors and priority for bus travel would reduce the number of cars in use and therefore would likely reduce the potential accident rate.</p> <p>Similar to the Bus Service Option, bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved safety.</p>	<p>Integration with other services and land-use is limited due to the proposed routing location of the BRT network along the corridor. One direct corridor is likely to be only served by BRT restricting its integration across the wider Corridor D area.</p> <p>The BRT (comparable with rail routes) is unable to penetrate and integrate with the same number of routes as a normal bus.</p>	<p>Potentially enhances accessibility. BRT will be restricted to a direct corridor mainly.</p> <p>Access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.</p>
Option 3: Light Rail Transit	<p>The travel demand on Corridor D is well below the capacity of between 3,000 and 7,000 pax/hr/dir for Light Rail. Therefore, it is unlikely that Light Rail would provide value for money given construction costs. Significant costs also associated with operation.</p>	<p>Environmental impacts in terms of construction, particularly within the city where significant land take may be required.</p> <p>Potentially produces less GHG than private car alternative, though Bus and BRT offers same advantages.</p>	<p>Higher safety rate than car mode due to dedicated infrastructure segregating from other road users.</p> <p>However Light Rail will have impact on safety as its route will sever corridors and city centre, introducing more conflicts at crossings and junctions for cars and active travel users.</p>	<p>Integration with other services and land-use is limited to the proposed routing location of the Light Rail network along specific corridors.</p> <p>The Light Rail (comparable with rail and BRT routes) is unable to penetrate the same number of routes as a bus.</p>	<p>Potentially enhances accessibility.</p> <p>However, access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.</p>
Option 4: Suburban Rail	<p>Travel demand on Corridor D is significantly below the capacity of 5,000 pax/hr/dir for Heavy Rail. Heavy Rail on Corridor D would result in significant costs that are associated with the construction, land acquisition and operation of Heavy Rail.</p>	<p>Environmental impacts in terms of construction, particularly within existing urban footprint and on a designated rail crossing bridge. This construction impact is further emphasised due to the lack of presence of Heavy Rail in this area.</p> <p>Potentially produces less GHG than private car alternative but does not offer any benefits over the other options.</p>	<p>Higher safety rate than car mode due to dedicated infrastructure segregating from other road users.</p> <p>The impact of Heavy Rail on Corridor D will have significant impact on safety due to the severance and increased conflicts it would result in if constructed.</p>	<p>Integration with other services and land-use is limited to the proposed routing location of the Heavy Rail network along the corridor.</p> <p>Heavy Rail would require a designated rail crossing across the River Suir to integrate with Plunkett Station.</p>	<p>Enhances accessibility for those living along potential rail routes but has limited flexibility in serving other areas not on the corridor.</p>

Table 7.12 Corridor D Options - Comparative Evaluation of Corridor Options against SEOs

Alternative	Likely to Improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
Option 1: Bus Services	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.11. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>	A C PHH BFF MA S W L CH - as the bus-based network on this corridor under Option 1 Bus Services would be able to utilise existing road space, potential adverse direct environmental effects would be least under this option.	A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		
Option 2: Bus Rapid Transport	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.11. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p> <p>A C PHH BFF MA S W L CH - Option 2 BRT would have a present a greater extent of potential adverse direct environmental effects in comparison to the bus services under Option 1, as Option 2 BRT would need more works and land to accommodate bus priority measures, junction widening and improved permeability.</p>		
Option 3: Light Rail Transit	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.11. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.	A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be elevated under Option 3 Light Rail Transit due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.	
Option 4: Suburban Rail	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.11. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.		A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be most under Option 4 Suburban Rail due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.

Table 7.13 Corridor E&F Options Multi-Criteria Assessment

	Economy	Environment	Safety	Integration	Accessibility and Social Inclusion
Option 1: Bus Services	Corridors E&F generates the combined demand of 1,684. The bus capacity demand levels (Figure 3-1) indicates that this demand level can be accommodated within the bus capacity (up to 2,000 pax/hr/dir). With the bus corridors utilising the existing road infrastructure (with some localised widening) this will make the best use of investment in the current network and could provide a greater return on investment, in terms of benefit to cost ratio.	Bus-based network on Corridors E&F will be able to utilise existing road space on, reducing the construction impact. Bus-based network produces less GHG than the private car alternative. Options are available for different fuel sources.	High frequency bus corridors and priority for bus travel on Corridors E&F would reduce the number of cars in use and therefore would likely reduce the potential accident rate. The improved bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved safety.	Better integrated bus network can connect with Plunkett Station, Belview Port and Slieverue Cross, as well as residential areas in Ferrybank and Mullinabro. Bus-based services can access wider areas of the city. Services can access wider areas of the city. A high frequency service corridor with city centre connections and cross-city connections can access bus station, rail station and potential P&R sites.	An integrated bus network can improve the accessibility and social inclusion to users and provide access to areas not easily served by more infrastructure intensive modes.
Option 2: Bus Rapid Transit	Given the idealised demand is across several roads/routes, it is unlikely that a BRT would reach the capacity of between 1,000 and 4,000 pax/hr/dir. Though the demand could be accommodated by the BRT. Although the BRT route would mainly utilise the current road highway at this stage of the design the BRT option would provide some return on investment, it will unlikely provide the same value for money, as the Bus Service Option.	BRT will likely have some impact on the surrounding environment, to accommodate bus priority measures and to improve the permeability of the service. Similar to Bus Service Option Produces less GHG than private car alternative. Options available for different fuel sources.	High frequency BRT corridors and priority for bus travel would reduce the number of cars in use and therefore would likely reduce the potential accident rate. Similar to the Bus Service Option, bus priority infrastructure on corridors and the utilisation of road space (due to reduced private car volumes) to support active travel modes will further contribute to improved safety.	Integration with other services and land-use is limited due to the proposed routing location of the BRT network along the corridor. One direct corridor is likely to be only served by BRT restricting its integration across the wider Corridor E&F area. The BRT (comparable with rail routes) is unable to penetrate and integrate with the same number of routes as a normal bus.	Potentially enhances accessibility. BRT will be restricted to a direct corridor mainly. Access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.
Option 3: Light Rail Transit	The combined travel demand on Corridors E&F are well below the capacity of between 3,000 and 7,000 pax/hr/dir for Light Rail. Therefore, it is unlikely that Light Rail would provide value for money given construction costs. Significant costs also associated with operation.	Environmental impacts in terms of construction, particularly within the city where significant land take may be required. Potentially produces less GHG than private car alternative, though Bus and BRT offers same advantages.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. However Light Rail will have impact on safety as its route will sever corridors and city centre, introducing more conflicts at crossings and junctions for cars and active travel users.	Integration with other services and land-use is limited to the proposed routing location of the Light Rail network along specific corridors. The Light Rail (comparable with rail and BRT routes) is unable to penetrate the same number of routes as a bus.	Potentially enhances accessibility. However, access may be limited in areas where infrastructure is constrained, resulting in longer walk times to access services.
Option 4: Suburban Rail	Travel demand on Corridors E&F is significantly below the capacity of 5,000 pax/hr/dir for Heavy Rail. Heavy Rail on Corridors E&F would result in significant costs that are associated with the construction, land acquisition and operation of Heavy Rail.	Environmental impacts in terms of construction, particularly within the existing urban footprint and for a designated rail crossing bridge. This construction impact is even more significant due to the lack of presence of Heavy Rail in this area. This mode will potentially produce less GHG than private car alternative but does not offer any benefits over the other options.	Higher safety rate than car mode due to dedicated infrastructure segregating from other road users. However, the impact of Heavy Rail on Corridors E&F will have significant impact on safety due to the severance and increased conflicts with other modes and movements it would result in if constructed.	Integration with other services and land-use is limited to the proposed routing location of the Heavy Rail network along the corridors. Heavy Rail would require a designated rail crossing across the River Suir to integrate with Plunkett Station.	Enhances accessibility for those living along potential rail routes but has limited flexibility in serving other areas not on the corridor.

Table 7.14 Corridor E&F Options - Comparative Evaluation of Corridor Options against SEOs

Alternative	Likely to Improve status of SEOs to a greater degree	Less Potential Conflict with status of SEOs - likely to be mitigated	Moderate Potential Conflict with status of SEOs - likely to be mitigated	More Potential Conflict with status of SEOs - less likely to be fully mitigated	Most Conflict with status of SEOs - less likely to be fully mitigated
Option 1: Bus Services	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.13. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>	<p>A C PHH BFF MA S W L CH - as the bus-based network on this corridor under Option 1 Bus Services would be able to utilise existing road space, potential adverse direct environmental effects would be least under this option.</p>	<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p>		
Option 2: Bus Rapid Transport	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.13. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p> <p>A C PHH BFF MA S W L CH - Option 2 BRT would have a present a greater extent of potential adverse direct environmental effects in comparison to the bus services under Option 1, as Option 2 BRT would need more works and land to accommodate bus priority measures, junction widening and improved permeability.</p>		
Option 3: Light Rail Transit	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.13. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p>	<p>A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be elevated under Option 3 Light Rail Transit due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.</p>	
Option 4: Suburban Rail	<p>A C PHH MA - this option would improve the capacity of public transport and help to reduce congestion along this corridor. Emissions (and associated interactions with human health) would be significantly lower per journey with this mode than would be the case with journeys by car - see also Table 7.13. Energy security would be contributed towards.</p> <p>A C PHH BFF MA S W L CH - this option would help to facilitate integration of land-use development with sustainable transport provision including appropriate levels of consolidated and intensified development around public transport networks. By facilitating consolidated and intensified development, this option would help to indirectly protect environmental components that might otherwise be impacted upon as a result of development that would potentially be spread out over greater areas and at a lower density.</p>		<p>A C PHH BFF MA S W L CH - all options would facilitate new consolidated and intensified development, potentially indirectly affecting all environmental components.</p>		<p>A C PHH BFF MA S W L CH - potential adverse direct environmental effects would be most under Option 4 Suburban Rail due to the construction impacts arising, particularly on lands that are already developed and in a context where there is currently an absence of this type of infrastructure.</p>

Table 7.15 Selected Options for the Strategy for each Corridor

Corridor	Options Considered (Selected Option(s) for the Strategy in bold)	Reasons for Choosing the Selected Alternatives in light of Other Reasonable Alternatives Considered
A	Option 1: Bus Services Option 2: Bus Rapid Transit Option 3: Light Rail Transit Option 4: Suburban Rail	Alternatives have been selected taking into account the environment and other selected criteria (economy, safety, integration and accessibility and social inclusion). "Option 1: Bus Services" is the preferred option for Corridor A based on the multi-criteria assessment, providing the most benefits in terms of Economy (return on investment), Environmental Impact and Integration. Bus Rapid Transit is not preferred given that the capacity of the bus-based option can cater for the travel demand on the corridor and provide more flexibility. However, it is acknowledged the bus network could be upgraded to a BRT type service in the future should demand exceed capacity. Travel demand, population and employment densities are below that required for any other alternative public transport measures along the corridor such as Light Rail and Heavy Rail.
B	Option 1: Bus Services Option 2: Bus Rapid Transit Option 3: Light Rail Transit Option 4: Suburban Rail	Alternatives have been selected taking into account the environment and other selected criteria (economy, safety, integration and accessibility and social inclusion). "Option 1: Bus Services" is considered to be the preferred option for Corridor B based on the multi-criteria assessment, providing the most benefits overall while maximising the economic benefits and cost efficiency. Travel demand, population and employment densities are below that required for any other alternative public transport measures along the corridor such as Bus Rapid Transit, Light Rail and Heavy Rail.
C	Option 1: Bus Services Option 2: Bus Rapid Transit Option 3: Light Rail Transit Option 4: Suburban Rail	Alternatives have been selected taking into account the environment and other selected criteria (economy, safety, integration and accessibility and social inclusion). "Option 1: Bus Services" is considered to be the preferential option for Corridor C based on the multi-criteria assessment, providing the most benefits overall while maximising value for money. Travel demand, population and employment densities are below that required for any other alternative public transport measures along the corridor such as Bus Rapid Transit, Light Rail and Heavy Rail.
D	Option 1: Bus Services Option 2: Bus Rapid Transit Option 3: Light Rail Transit Option 4: Suburban Rail	Alternatives have been selected taking into account the environment and other selected criteria (economy, safety, integration and accessibility and social inclusion). "Option 1: Bus Services" is considered to be the preferred options for Corridor D based on the multi-criteria assessment, providing the most benefits overall while maximising value for money. Bus Rapid Transit is not preferred given the capacity of a bus-based options can cater for the travel demand and provide more flexibility. However, the bus network could be upgraded to a BRT type service in the future should demand exceed capacity. Travel demand, population and employment densities are below that required for any other alternative public transport measures along the corridor such as Light Rail and Heavy Rail.
E&F	Option 1: Bus Services Option 2: Bus Rapid Transit Option 3: Light Rail Transit Option 4: Suburban Rail	Alternatives have been selected taking into account the environment and other selected criteria (economy, safety, integration and accessibility and social inclusion). "Option 1: Bus Services" is considered to be the preferred option based on the multi-criteria assessment, providing the most benefits overall while maximising the economic benefits. The corridor does not have the population or employment density to support a BRT or LRT line, while the creation of additional stations along the existing rail corridor would require substantial investment but would still not improve accessibility as the bus services provides greater coverage and flexibility in accessing the predominantly low-density residential areas in the corridor.

Section 8 Evaluation of Strategy Provisions

8.1 Introduction

The relevant aspects of the current state of the environment (see Section 4) and the Strategic Environmental Objectives (see Section 5 and Table 8.1) are used in the assessment of the Strategy.

The provisions are evaluated using compatibility criteria (see Table 8.2) in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the Strategy provisions are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. BFF, which stands for SEOs relating to the environmental components of biodiversity and flora and fauna⁵⁹.

The interactions identified are reflective of likely significant environmental effects⁵⁹:

1. Interactions that would be likely to improve the status of a particular SEO would be likely to result in a significant positive effect on the environmental component to which the SEO relates.
2. Interactions that would potentially conflict with the status of an SEO and would be likely to be mitigated would be likely to result in potential significant negative effects however these effects will be mitigated by measures which have been integrated into the Strategy (see Section 9).
3. Interactions that would probably conflict with the status of an SEO and would be unlikely to be mitigated would be likely to result in a significant negative effect on the environmental component to which the SEO relates.

The degree to which effects can be determined is limited as the Strategy will be implemented through the lower tier environmental assessments and decision making of planning authorities.

⁵⁹ These effects include secondary, cumulative (see Section 7.3), synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Table 8.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Strategic Environmental Objectives
Air	A	<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 transport • 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 and move closer to WHO recommended levels
Climatic Factors	C	<ul style="list-style-type: none"> • To minimise emissions of greenhouse gasses • Integrate sustainable design solutions into 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
Population and Human Health	PHH	<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 citizens from environment-related pressures and risks to health and well-being
Biodiversity, Flora and Fauna	BFF	<ul style="list-style-type: none"> • To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species • Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function • Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species • Enhance biodiversity in line with the National Biodiversity Strategy and its targets • To protect, maintain and conserve natural capital
Material Assets	MA	<ul style="list-style-type: none"> • Optimise existing infrastructure and provide new infrastructure to match population distribution proposals • Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes
Soil (and Land)	S	<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 • Safeguard areas of prime agricultural land and designated geological sites
Water	W	<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 and Marine Strategy Framework Directive • Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion, particularly coastal areas • Integrate sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects
Landscape	L	<ul style="list-style-type: none"> • To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention
Cultural Heritage	CH	<ul style="list-style-type: none"> • Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage

Table 8.2 Criteria for appraising the effect of Strategy provisions on SEOs

Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
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8.2 Overall Findings

The overall findings of the SEA, informed by the content and provisions of the Strategy and integrated into the Strategy in an iterative manner, including where relevant as mitigation measures at Chapter 17 of the Strategy “Environmental Protection and Management”, are as follows:

- **Final 2030 Emissions Assessment**

The implementation of the WMATS elements intended for delivered by 2030 – which comprises an ambitious delivery programme for BusConnects Waterford and the WMA Cycle Network, coupled with the planned vehicle electrification and increased use of bio-fuel set out in the Climate Action Plan 2021, (taking account of the growth to 2030), will achieve a 26% reduction compared to the 2018 figure.

Additional measures are required to further reduce emissions to meet the 51% reduction target. A number of alternative approaches, as set out above, are available to achieve this supplemental reduction and it is clear that viable pathways are available to achieve the halving of greenhouse gas emissions from transport across the region by 2030.

Following the adoption of the final WMATS, it is intended that an additional demand management study will be undertaken, in conjunction with a further examination of goods vehicles operation, to develop finalised proposals to achieve the intended level of emissions reductions.

It is acknowledged that there are various permutations available to achieve the required target, and further detailed assessment will be required to establish and calibrate the optimal framework. That assessment work to develop the optimal framework will be undertaken at an early point in the lifetime of the Strategy, and will take account of policies set out in updates to the Climate Action Plan 2021 and derived from the carbon budgets to be established under the Climate Action Plan and Low Carbon Development (Amendment) Act 2021.

- **Emissions Levels in 2040**

Emissions targets are clearly established for 2030 under the provisions of the Climate Action Plan and Low Carbon Development (Amendment) Act 2021. That Act also sets out the objective to achieve a ‘climate neutral economy by no later than the end of the year 2050’. Accordingly, while no specific targets are set for 2040, the final year of the strategy, it is intended that emissions will continue on a downwards trajectory between 2030 and 2050.

The continued electrification of the transport fleet and the implementation of the remaining elements of the strategy will further reduce greenhouse gas emissions within the WMA.

- **Compliance with Legislation and Guidelines – Environmental Protection and Sustainable Development**

The National Transport Authority are integrating all recommendations arising from the SEA and AA processes into the Strategy (see Section 9 of this report), facilitating compliance of the Strategy with various European and National legislation and Guidelines relating to the protection of the environment and the achievement of sustainable development.

Implementation of the Strategy will contribute towards efforts to achieve a number of the 17 United Nations Sustainable Development Goals⁶⁰ of the 2030 Agenda for Sustainable Development.

⁶⁰ Including:

- Goal 3. Ensure healthy lives and promote well-being for all at all ages.
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12. Ensure sustainable consumption and production patterns.
- Goal 13. Take urgent action to combat climate change and its impacts.
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

- **Improvements in Sustainable Mobility and Associated Effects (emissions, noise and energy usage)**

The Strategy facilitates improvements in sustainable mobility, including a shift from car to more sustainable and non-motorised transport modes, through the development of transport infrastructure and services and transitioning to lower emission vehicles. Improvements in sustainable mobility will result in the following positive effects:

- Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets;
- Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health;
- Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and
- Energy security.

- **Positive Effects in Urban Areas**

In combination with other plans and programmes, including those from the land use sector, the Strategy facilitates more consolidated urban areas, reuse and regeneration of brownfield lands and reductions in sprawl. In this way the Strategy would facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon ecology, landscape designations, architectural and archaeological heritage and soil.

Among other positive environmental effects, the Strategy facilitates the enhancement of the public realm (including cultural heritage and its context) in urban areas by facilitating the replacement of motorised transport modes with more sustainable and non-motorised modes including cycling and walking.

- **Strategy Outcomes - Key Indicators - Reduction in CO₂ Emissions from Transport in the WMA**

The WMATS, in combination with a number of Government initiatives, related primarily to the conversion of the national fleet to low and zero- emissions vehicles, is forecast to lead to a reduction in CO₂ Emissions of approximately 56% over the lifetime of the Strategy to 2040.

The rate at which this is achieved will depend on a number of factors, including the following:

1. The speed at which the conversion of the fleet to electric vehicles can be rolled out;
2. The extent to which the local authorities and the NTA deliver alternatives to the private car such as the Cycle Network and Bus Corridors;
3. The extent to which demand management measures are implemented by local and national government to reduce the use of cars; and
4. Technological advances in the area of alternative fuels for goods vehicles.

In phasing the implementation of the WMATS, many of the key Climate Action Management measures, such as BusConnects Waterford, the cycle network, traffic signal prioritisation for sustainable modes, reduced parking and vehicle electrification are front-loaded into the first phase. This enables, in conjunction with the additional steps set out in Chapter 14, transport emissions in the WMA to meet the target level of reduction by 2030.

As set out in that chapter, this will require additional assessment work on the additional emissions reduction approaches to establish and calibrate the optimal permutation, particularly in relation to demand management. The assessment work to develop this optimal framework will be undertaken at an early point in the lifetime of the WMATS in cooperation with Government and the local authorities.

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- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

- **Strategy Outcomes - Key Indicators - Air Quality**

The Transport Strategy, in combination with other Government policies and programmes, is forecast to lead to a significant reduction in air polluting emissions compared to 2016 as indicated below.

Air-polluting Emissions 2016 and 2040 (Kg)

	NOx	NO2	PM10	PM2.5
2016	232.72	70.38	16.97	11.16
2040 with strategy	41.22	10.13	15.36	8.45
Reduction	-82%	-86%	-10%	-24%

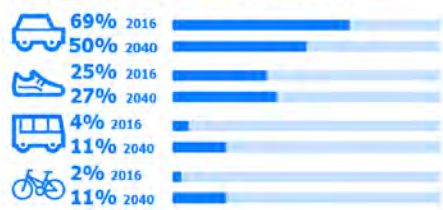
- **Strategy Outcomes - Mode Share**

The WMATS is forecast to lead to a significant reduction in car mode share for the study area as a whole, reducing from 72% in 2016 to 56% in 2040 with the WMATS in place, as indicated below.

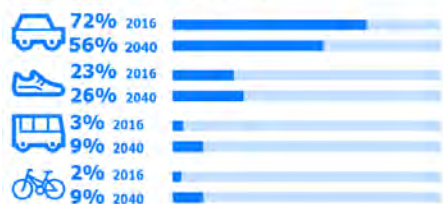
For the AM Peak period, the corresponding figures are 69% and 50%.

All other modes increase with the highest proportional increase being seen in cycling, from 2% to 11%.

AM Peak Mode Share 2016 - 2040



Mode Share 2016 - 2040



- **Strategy Outcomes - Targets for Cycling and Walking**

Notwithstanding the outputs above, which are the result of a modelling exercise only, the NTA, in conjunction with the local authorities will aim to meet the walking and cycling mode split targets set out below up to 2040.

	Walking	Cycling
WMA Baseline	23%	2%
WMA Modelled Outcome	26%	9%
WMA Target	30-35%	10-15%

The cycle infrastructure proposed under the Strategy will deliver a comprehensive and safe network of cycling routes serving all of the key areas and destinations, and with the capacity for large volumes of cyclists.

With that infrastructure in place, the level of usage will be determined by the willingness to use cycling instead of other modes, in particular the car mode. Accordingly, the cycling target is ambitious and meeting it will require high levels of cooperation from all stakeholders in the region. The higher targets for Waterford City and Suburbs reflect the greater potential for these modes due to the number of shorter trips being undertaken.

It should be noted that the modelled output in relation to cycling mode share, does not take account of uplifts from behavioural change programmes and targeted information campaigns,

which are difficult to account for in a strategic transport model. With the addition of these measures, an increased mode share for cycling will be delivered. However, it should also be noted that the implementation of demand management measures which aim to encourage the use of alternatives to the private car further, will be required to support these higher levels of uptake.

- **Potentially Significant Adverse Effects to be mitigated**

Potentially significant adverse environmental effects arising from the Strategy are detailed on Table 8.3. These effects will be mitigated by the various provisions which have been integrated into the Strategy including those that have arisen through the SEA and AA processes (see Section 9). These mitigating provisions together with the contribution that the Strategy will make to sustainable mobility means that the Strategy facilitates various significant positive effects upon the protection and management of environmental components.

Table 8.3 details the various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (see also Section 7.3). Environmental impacts which occur will be determined by the nature and extent of multiple or individual projects and site specific environmental factors. By complying with appropriate mitigation measures - including those which have been integrated into the Strategy - potentially significant adverse environmental effects which could arise as a result of implementing the Strategy would be likely to be avoided, reduced or offset.

Taking into account the geographical scope of Strategy provisions and the detailed Strategy provisions relating to environmental protection and management, it is determined that significant environmental effects will not occur in Northern Ireland.

8.3 Appropriate Assessment

Stage 2 Appropriate Assessment (AA) has been undertaken alongside the preparation of the Strategy. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The conclusion of the AA is that the Strategy will not affect the integrity of the Natura 2000 network⁶¹. Various content has been integrated into the Strategy through the SEA and AA processes (see Section 9). The preparation of the Strategy, SEA and AA has taken place concurrently and the findings of the AA have informed both the Strategy and the SEA.

8.4 Interrelationship between Environmental Components

The SEA Directive requires the Environmental Report to include information on the likely significant effects on the environment, on issues such as biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. Likely significant effects on environmental components which are identified include those that are interrelated; implementation of the Strategy will not affect the interrelationships between these components. The presence of significant interrelationships between environmental components is identified on Table 8.4.

⁶¹ 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.

Table 8.3 Overall Effects Arising from the Strategy

Environmental Component	Likely Environmental Effects, as a direct result of development and activities under the Strategy and in combination with the wider planning framework (see also Section 7.3)			SEOs
	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated	Residual Adverse Effect ⁶²	
Air and climatic factors	<ul style="list-style-type: none"> Contributions towards reductions in greenhouse gas and other emissions to air and associated achievement of legally binding targets (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of: facilitating a shift from car to more sustainable and non-motorised transport modes; and facilitating more consolidated urban areas and reductions in sprawl. Contributions towards reductions in consumption from non-renewables and associated achievement of legally binding renewable energy targets, including sectoral targets for transport (in combination with plans and programmes from all sectors, including energy, transport and land use planning). Contributions towards managing traffic flows (and associated management of adverse effects as a result of traffic on air quality and noise levels). 	<ul style="list-style-type: none"> Emissions to air and associated issues. 	<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 Strategy, including those relating to sustainable mobility. 	A C
Population and human health	<ul style="list-style-type: none"> Provides for the development of transport infrastructure and services in locations which will facilitate use by those living and working in urban/suburban areas. Facilitates contribution towards the protection of human health as a result of contributing towards the protection of environmental vectors, especially air. 	<ul style="list-style-type: none"> Potential interactions if effects upon environmental vectors such as air are not mitigated. 	<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 Strategy, including those relating to sustainable mobility. 	PHH
Biodiversity and flora and fauna	<ul style="list-style-type: none"> Facilitates lower overall effects on ecology (including designated sites, ecological connectivity and habitats) – due to increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites. Contributes towards the protection of vegetation as a result of contributing towards the protection of environmental vectors, especially air. Potential ecological enhancement interventions along transport corridors. 	<ul style="list-style-type: none"> Arising from both construction and operation of transport infrastructure and services and associated facilities/ infrastructure: loss of/damage to biodiversity in designated sites, 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. Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species and/or coastal squeeze. Effects in riparian zones where new crossings of waters are progressed. Potential effects on vegetation from transport emissions. 	<ul style="list-style-type: none"> Loss of an extent of non-protected habitats as a result of new or widened transport infrastructure that involves the replacement of semi-natural land covers with artificial surfaces Losses or damage to ecology (these would be in compliance with relevant legislation) 	BFF

⁶² Residual adverse environmental effects would be generally non-significant. Significant residual adverse effects would be in compliance with the relevant environmental protection legislation.

Environmental Component	Likely Environmental Effects, as a direct result of development and activities under the Strategy and in combination with the wider planning framework (see also Section 7.3)			SEOs
	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated	Residual Adverse Effect ⁶²	
Material Assets	<ul style="list-style-type: none"> Contributions towards energy security (in combination with plans and programmes from all sectors, including energy, transport and land use planning) as a result of reducing traffic flows and associated energy use. Contributions towards a mode shift away from the private car to public transport, walking and cycling and associated enhancement of the public realm. Contributions towards the protection of built/amenity assets and infrastructure. Contributions towards the reuse and regeneration of brownfield lands thereby contributing towards a higher efficiency of land utilisation, sustainable mobility and a reduction in the need to develop greenfield lands. By facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites there will be lower adverse effects upon ecology, landscape designations, architectural and archaeological heritage and soil. Contributions towards appropriate waste management. 	<ul style="list-style-type: none"> Generation of construction waste. Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure. 	<ul style="list-style-type: none"> Residual wastes (these would be disposed of in line with higher level waste management policies) Potential residual losses to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure 	MA
Soil	<ul style="list-style-type: none"> Minimises land-take and loss of extent of soil resource – as a result of facilitating increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites. Contributions towards the protection of the environment from contamination arising from brownfield development. Contributions towards the protection of features or areas of geological/geomorphological interest. 	<ul style="list-style-type: none"> Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of transport and associated transport facilities/infrastructure. Adverse impacts on features or areas of geological/geomorphological interest as a result of construction of transport and associated transport facilities/infrastructure. Potential for increase in coastal/river bank 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 and from sea level rise/coastal/estuarine erosion. 	S
Water	<ul style="list-style-type: none"> Contributions towards lower effects on ground and surface waters due to higher levels of development within established and serviced settlement centres that have installed/upgraded water services capable of delivering Water Framework Directive targets. Contributions towards compliance with the Flood Risk Management Guidelines. 	<ul style="list-style-type: none"> Adverse impacts upon the status of water bodies and entries to the WFD Register of Protected Areas, arising from changes in quality, flow and/or morphology. Increase in the risk of flooding. 	<ul style="list-style-type: none"> Flood related risks remain due to uncertainty with regard to extreme weather events. 	W
Landscape	<ul style="list-style-type: none"> Contributions towards the protection of landscape designations as a result of facilitating compliance with relevant plans. 	<ul style="list-style-type: none"> Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape. 	<ul style="list-style-type: none"> Residual visual effects (these would be in compliance with landscape designation provisions). 	L
Cultural Heritage	<ul style="list-style-type: none"> Contributions towards the protection of cultural heritage (archaeological and architectural) as a result of facilitating compliance with relevant legislation. Contributions towards the enhancement of cultural heritage and its context in urban areas and their surrounds as a result of replacing motorised modes with more sustainable and non-motorised modes of transport such as walking and cycling. 	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities, including as a result of increasing traffic flows. 	<ul style="list-style-type: none"> Potential alteration to the context and setting of designated cultural heritage however these will occur in compliance with legislation. Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Strategy. 	CH

Table 8.4 Presence of Interrelationships between Environmental Components

Component	Biodiversity, flora and fauna	Population and human health	Soil	Water	Air and Climatic factors	Material assets	Cultural heritage	Landscape
Biodiversity, flora and fauna		Yes	Yes	Yes	Yes	Yes	No	Yes
Population and human health			Yes	Yes	Yes	Yes	No	Yes
Soil				Yes	Yes	Yes	No	No
Water					Yes	Yes	No	No
Air and Climatic factors						Yes	No	No
Material assets							Yes	Yes
Cultural heritage								Yes
Landscape								

8.5 Detailed Evaluation of Strategy Provisions

The following applies to each of the sub-sections 8.5.1 to 8.5.9 below:

The Strategy is situated in a hierarchy of documents setting out public policy for land use, transport and climate mitigation, such as the National Planning Framework, the National Development Plan, the National Mitigation Plan, the Southern Regional Spatial and Economic Strategy and associated Metropolitan Area Strategic Plan (for additional detail please refer to Section 3.2 “Hierarchy of Planning and Environmental Assessment” in this report) and the Statutory land use plans of various planning authorities.

These other existing policies, plans etc. have been subject to their own environmental assessment processes, as relevant, and already provide for various measures that have been compiled into the Strategy. The Strategy aligns with these documents and will be incorporated into the review and preparation of these documents.

Individual transport projects must be consistent and comply with the provisions of these other policies, plans etc. and will be subject to their own project level EIA and AA requirements as relevant. An assessment of cumulative effects is provided at Section 7.3 of this report.

Some SEOs occur in both the “Likely to Improve status of SEOs” and “Potential Conflict with status of SEOs- likely to be mitigated” columns as the provisions have the potential to both contribute towards the protection of the environment and potentially conflict with it.

For example, with respect to biodiversity and flora and fauna (SEO BFF), the Strategy:

- Facilitates lower overall effects on ecology (including designated sites, ecological connectivity and habitats) – due to increased utilisation of lands within existing development boundaries and use of existing utilities and brownfield sites.
- Contributes towards the protection of vegetation as a result of contributing towards the protection of environmental vectors, especially air.
- Potential ecological enhancement interventions along transport corridors.

However, the Strategy also presents the following potentially significant adverse effects, also with respect to biodiversity and flora and fauna (SEO BFF):

- Arising from both construction and operation of transport infrastructure and services and associated facilities/ infrastructure: loss of/damage to biodiversity in designated sites, 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.
- Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species and/or coastal squeeze.
- Effects in riparian zones where new crossings of waters are progressed.
- Potential effects on vegetation from transport emissions.

The alignments and details of proposed transport projects set out in the Strategy, unless already provided for by Plans/Strategies/etc. that have been subject to environmental assessment, are indicative only and are subject to further development as the design and planning processes for individual projects progress. New projects will be required to be subject to lower-tier environmental assessment and detailed corridor and route selection processes as relevant (including those arising from SEA recommendation “Corridor and Route Selection Process” integrated into Chapter 17. “Environmental Protection and Management” of the Strategy).

The parts of the Strategy relating to Climate Action Management (Chapter 14), Monitoring and Implementation (Chapter 15), Strategy Outcomes (Chapter 16), Environmental Assessment (Chapter 17) has informed this SEA Environmental Report at Section 8.2 “Overall Findings”, Section 9 “Mitigation Measures” and Section 10 “Monitoring Programme”.

8.5.1 Strategy Vision and Objectives

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>Strategy Vision</p> <p>The proposed Vision for WMATS is aligned with that outlined in the RSES / Metropolitan Area Strategic Plan (MASP): To set the framework for an accessible, high-quality and integrated transport network that enables the sustainable growth of the Waterford Metropolitan Area as a key regional driver of growth in the South-East Region, and an international competitive European city region as envisaged by the National Planning Framework 2040.</p> <p>Strategy Objectives</p> <p>The Strategic Objectives of the Strategy are as follows:</p> <ul style="list-style-type: none"> Objective 1: To meet the demand generated by future growth of the WMA through the provision of an efficient transport network. Objective 2: To prioritise sustainable transport and active travel to reduce car dependency. Objective 3: The provision of a high level, citywide public transport system connecting to key destinations within high demand corridors. Objective 4: To increase transport capacity where needed to achieve the strategy outcomes. Objective 5: To deliver a fully accessible and inclusive transport system. Objective 6: To enhance the public realm of the WMA through demand management measures and transport interventions. Objective 7: To minimise the impact of motorised traffic in urban centres. Objective 8: To identify and protect key strategic routes for the movement of freight traffic. 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p><i>The Strategy Vision and Objectives would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</i></p> <p><i>The various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.</i></p> <p><i>In relation to the Strategic Objectives outlined above and as outlined in the Strategy:</i></p> <ul style="list-style-type: none"> <i>Objective 1: The WMATS has been prepared based on the land use forecasts prepared by the NTA in consultation with both Local Authorities, guided by higher level national and regional plans. As such, the demand generated for the strategy's development and assessment considers all existing and proposed development as provided for by these policy documents.</i> <i>Objective 2: Implementation of WMATS will result in a step-change in public transport provision and builds upon existing walking and cycling strategies adopted by both Local Authorities. This prioritisation of sustainable modes and the decarbonisation of the public transport fleet is in line with the growing recognition of the negative impacts of motorised vehicles and carbon emissions on the environment and people's health and wellbeing. The need for private car ownership (and dependency) will be greatly reduced through the adoption of demand management and supporting measures including car clubs and Mobility as a Service.</i> <i>Objective 3: BusConnects Waterford will provide end-to-end radial and orbital connectivity between Waterford City Centre and suburbs. The network's key corridors will encompass catchment areas of high trip attractors and generators of all key education and employment hubs including the City Centre, Waterford IDA, Waterford Institute of Technology, Belview Port, University Hospital Waterford and Waterford Airport.</i> <i>Objective 4: Implementation of WMATS will result in significantly upgraded transport network and capacity to realise future population and employment growth projections. The Strategy directs sustainable transport infrastructure to where it is most needed, to complement land-use projects outlined in the NPF, NDP, RSES and future growth scenarios provided to the NTA by Waterford City & County Council and Kilkenny County Council.</i> <i>Objective 5: 70% of jobs and people within the WMA will be covered by the BusConnects Waterford network. This will provide a reliable, high frequency, fully accessible public transport service to improve connectivity, in particular within the city and suburbs. In terms of social inclusion, the WMATS provides for significant uplift in bus services to areas of social disadvantage. The harnessing of the principle of Universal Design will ensure that walking network upgrades, especially to and around public transport stops and stations, public transport buildings and passenger facilities, and public transport vehicles consider and provide accessibility for all. The WMATS provides the framework for investment which will enhance personal security around public transport stops and stations; and</i> 				

along walking and cycling routes, in particular through improved public lighting and security measures.

- *Objective 6: There will be a gradual transfer of kerbside space and other areas currently dominated by cars for use by pedestrians and cyclists. This will facilitate public realm enhancements in line with Design Manual for Urban Roads and Streets and the National Cycle Manual guidance. Public realm will be accessible, attractive, safe and interesting for all ages and abilities.*
- *Objective 7: There will be a gradual transfer of kerbside space and other areas currently dominated by cars for use by pedestrians and cyclists. This will facilitate public realm enhancements in line with Design Manual for Urban Roads and Streets and the National Cycle Manual guidance. The public realm will be accessible, attractive, safe and interesting for all ages and abilities. This will be of particular benefit to Waterford City Centre where road space will be reallocated to sustainable modes and for the creation of new urban spaces. This will make the city a more attractive place to live, work in and visit, and will facilitate significantly higher levels of social, cultural and economic activity.*
- *Objective 8: The existing removal of HGVs from the City Centre and built-up areas has significantly improved the pedestrian environment by reducing noise and air pollution and risk of conflict. WMATS also supports the development of a Regional Freight Strategy and an updated to the existing Local Freight Strategy.*

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised.

8.5.2 Walking, Accessibility and Public Realm

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>Walkability improvements envisaged for the City Centre over the lifetime of the Strategy include:</p> <ul style="list-style-type: none"> • Maintaining pedestrian infrastructure to a high standard across the WMA; • Creation and improvement of primary pedestrian networks throughout the WMA; • Ensuring footpaths are of sufficient width with even surface and a legible palette of materials and can accommodate an array of street furniture such as bins, cycle parking, benches, planting and street lighting; • Enforcement of illegal parking, advertising boards and encroachment by unregulated outdoor seating on footpaths; • Re-allocation of road space to prioritise pedestrian movement and connections; • Key junction improvements to prioritise pedestrian connectivity and permeability, including reduced wait times at crossings; • Aligning crossing facilities with pedestrian desire lines and create additional pedestrian crossing points where necessary; • Undertake regular Walkability Audits with key stakeholder groups; and • Creation of the committed Sustainable Transport Bridge for pedestrians, cyclists and an electric shuttle bus over the River Suir. <p>The provisions in this chapter include Measures for:</p> <ul style="list-style-type: none"> • Steady State Maintenance of Footpaths • Primary Pedestrian Network • Improved Footpaths • Improved Junctions • Crossing Times • Crossing Points • Sustainable Transport Bridge • Metropolitan Town and Village Centres • Accessibility for all • Local Amenity Routes • School Streets • Wayfinding 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		

- Pedestrianisation
- Permeability
- 10-Minute Neighbourhood

The Walking Network in the Strategy focuses on the existing and proposed Development Plans and Local Area Plans from both Local Authorities. These plans were reviewed to enhance integration and connectivity with the measures for the cycle, public transport and road network.

Commentary:

The Walking, Accessibility and Public Realm Measures would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, walking has been proven to bring significant social, economic, environmental, and health and well-being benefits to society.

The key outcomes for walking under the Strategy Measures are as follows:

- *An increase in walking for all trips, particularly for short journeys;*
- *A fully accessible, inclusive, safe, and attractive pedestrian environment suitable for all ages and abilities;*
- *An increase in linked trips with cycling and public transport; and*
- *All new and retrofitted schemes will be designed in accordance with the overarching principles set out in the Design Manual for Urban Roads and Streets.*

The measures would help to facilitate increased use of more sustainable modes of transport and associated positive environmental effects including (SEOs A, C, PHH and MA):

- *Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets;*
- *Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health;*
- *Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and*
- *Energy security.*

Lower-tier plans/strategies/etc., amendments to plans/strategies/etc. and projects are subject to their own SEA, EIA and AA processes as relevant and appropriate.

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

Effects in riparian zones where new crossings of surface waters are progressed would need to be considered carefully to ensure the protection of the integrity of ecologically designated European sites (SEO BFF) and the status of water bodies (SEO W), including morphological status.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised.

8.5.3 Cycling

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>The Cycle Network in the Strategy is fundamentally based on the proposals contained within the Draft Cycle Network Plan for Waterford City and Environs 2014. This Cycle Plan was reviewed to ensure integration with the proposals for public transport, walking and roads within the Strategy. Additional proposals align with BusConnects schemes, the Deise Greenway, and key trip attractors such as Park & Ride facilities.</p> <p>High-quality infrastructure and supporting measures are included in order to cultivate a cycling culture in the WMA, and to give all individuals the choice to cycle, including:</p> <ul style="list-style-type: none"> • Identification of Primary, Secondary, Inter-Urban, Feeder and Greenway Routes; • Facilities designed to National Cycle Manual standards including cycle parking; • Full or light segregation from other modes to ensure safety and comfort for all road users; • Local traffic calming, lower speed limits and junction treatments, particularly at complex junctions in an urban context; and • Careful provision within pedestrian environments in central areas. <p>The provisions in this chapter include Measures for:</p> <ul style="list-style-type: none"> • WMA Cycle Network • Cycle Infrastructure Design • Steady State Maintenance of Cycling Infrastructure • Bike Share Scheme Expansion • Bike Share Scheme Electrification • Short-Stay Cycle Parking • Long-Stay Cycle Parking • End-of-Trip Facilities • Behavioural Change and Promotion 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p><i>The Cycling Measures would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</i></p> <p><i>As identified in the Strategy, cycling is a low cost, sustainable and growing mode of transport.</i></p> <p><i>Development of the network included in the Strategy would be likely to result in a series of long lasting positive environmental effects, including those on environmental components including sustainable mobility, accessibility to public assets and infrastructure and air and climatic factors.</i></p> <p><i>The measures would help to facilitate increased use of more sustainable modes of transport and associated positive environmental effects including (SEOs A, C, PHH and MA):</i></p> <ul style="list-style-type: none"> • Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets; • Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health; • Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and • Energy security. <p><i>The development of cycling projects, however, presents a variety of potentially adverse environmental effects that would, if unmitigated, have the potential to arise from both the construction and operation of such developments and/or their ancillary infrastructure (SEOs BFF, W, S, CH and L). These types of infrastructure can sometimes be sought in ecologically and visually sensitive areas, including adjacent to the banks of rivers and streams. Potential adverse effects would be mitigated both by measures which have been integrated into the Strategy which provide for and contribute towards environmental protection and management (including those identified at Section 9 of this report) and by measures arising from lower tier assessments (including those for the preparation of lower tier plans and projects). Projects would need to be subject to normal planning and environmental assessment processes, as well as complying with the Corridor and Route Selection Process detailed under Section 9 of this report.</i></p>				

Lower-tier plans/strategies/etc., amendments to plans/strategies/etc. and projects are subject to their own SEA, EIA and AA processes as relevant and appropriate.

As identified in the Strategy, all routes and alignments are indicative and subject to change through the statutory scheme appraisal process. Projects will be required to be subject to lower-tier environmental assessment and detailed corridor and route selection processes as relevant (including those arising from SEA recommendation "Corridor and Route Selection Process" integrated into Chapter 17).

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

Effects in riparian zones where new crossings of surface waters are progressed would need to be considered carefully to ensure the protection of the integrity of ecologically designated European sites (SEO BFF) and the status of water bodies (SEO W), including morphological status.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised.

8.5.4 BusConnects

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>The NPF identifies the provision of a citywide public transport network, with enhanced accessibility from the City Centre to the University Hospital Waterford and WIT, as a key enabler for Waterford. It is also consistent with the Climate Action Plan, NDP and RSES which envisage a significantly enhanced bus service in Waterford by 2030. For the purposes of assessing the Strategy, an indicative future bus network for 2040 has been developed and refined in an iterative manner, considering corridor travel demand analysis work. The final bus network that will be implemented in the short-medium term will require more detailed service planning and will represent a refinement of the indicative network presented in this Strategy due to, inter alia, detailed operational requirements and changing local traffic considerations.</p> <p>The provisions in this chapter include Measures for:</p> <ul style="list-style-type: none"> • BusConnects Service Network • Bus Priority • Core Bus Corridors • Connecting Ireland • Local Link • Branding and Livery • 24 Hour Services • Zero Emissions Fleet • Coach Management Strategy • Steady State Maintenance of Public Transport • Fully Accessible Fleet 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		

- New Stops and Shelters
- RTP1

Commentary:

The BusConnects provisions would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

Many of the projects detailed in this Chapter, as with other Chapters, are already provided for within other plans, programmes, strategies etc. that have already been subject to environmental assessment.

The BusConnects provisions, including the supporting measures, would help to avoid delays, improve performance, increase bus speeds and allow for reliable journey times. These provisions would also contribute towards an overall improvement in sustainable mobility, including a shift from car to more sustainable transport modes, and improve traffic flows. The bus system proposed would enable more people to travel by bus than ever before, and allow bus commuting to become a viable and attractive choice for increasing numbers of employees, students, shoppers and visitors. All of this would lead to positive environmental effects including (SEOs A, C, PHH and MA):

- *Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets;*
- *Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health;*
- *Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and*
- *Energy security.*

Although these provisions would contribute towards reductions in emissions to air including noise, an increase noise levels could be experienced at specific locations (SEOs A, C and PHH).

BusConnects would facilitate enhancement of the public realm (SEOs MA and CH) in urban areas by facilitating the replacement of motorised transport modes with more sustainable and non-motorised modes such as low emission/fully electric bus vehicles and cycling.

Supporting measures provided for would improve the quality of the bus service provided to the customer. Provision of a quality bus service would improve the likelihood that this service is used by the customer, thereby improving sustainable mobility with associated interactions with emissions and energy usage. A lower emission fleet would be likely to be more energy efficient and would emit fewer emissions, further contributing towards protection of the environment including with respect to air quality and greenhouse gas emissions targets (SEOs A, C and PHH).

The types of environmental effects, including the range of adverse effects, likely to or with the potential to, if unmitigated, arise from the provisions in this Chapter are consistent with those as detailed on Table 8.3. At this Strategy level, there is an unavoidable lack of specificity associated with proposals. This specificity and associated environmental assessment would be provided at project level. Notwithstanding this, it is possible to identify potentially significant adverse effects, including:

- *Land take resulting from new or widened bus corridors, interchange facilities or bus stop and shelter provision (SEO S);*
- *Potential loss of built/amenity assets and infrastructure (SEO MA) such as: parts of public open spaces, parks and recreational areas; parts of gardens (with associated rebuilding of new garden walls back from the existing road boundary); lands in front of commercial properties parts of pathways; and on-street parking.*
- *Potential loss of/damage to biodiversity including removal of old trees, tree lines or areas of vegetation along some of the corridors and interactions with designated ecological sites (SEO BFF);*
- *Potential impacts upon the status of water bodies (SEOs W), including morphological status, especially at the crossing points of rivers and streams;*
- *Potential loss of protected structures and/or context and potential damage to the special character or architectural interest of Architectural Conservation Areas (SEO CH);*
- *Potential loss of designated and unknown archaeology (SEO CH); and*
- *Traffic, noise, dust and vibration during construction (SEO PHH).*

BusConnects is already provided for by the National Planning Framework and associated National Development Plan (Project 2040) and the Regional Spatial and Economic Strategy.

As identified in the Strategy, all routes and alignments are indicative and subject to change through the statutory scheme appraisal process. Projects will be required to be subject to lower-tier environmental assessment and detailed corridor and route selection processes as relevant (including those arising from SEA recommendation "Corridor and Route Selection Process" integrated into Chapter 17. Accordingly, some of the details of the individual proposals will be subject to amendment as this design development work is undertaken. The design and planning of individual projects will be carried out in accordance with prevailing legislation relating to environmental assessment and public consultation.

Lower-tier plans/strategies/etc., amendments to plans/strategies/etc. and projects are subject to their own SEA, EIA and AA processes as relevant and appropriate.

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in

lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised.

8.5.5 Rail

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>The provisions in this chapter include Measures for:</p> <ul style="list-style-type: none"> All Island Strategic Rail Review Plunkett Station Relocation <p>The Department of Transport and the Northern Irish Department for Infrastructure are jointly undertaking the All Island Strategic Rail Review in order to:</p> <ul style="list-style-type: none"> Contribute to Decarbonisation; Improve All Island Connectivity Between Major Cities; Enhance Regional and Rural Accessibility; Encourage sustainable mobility; Foster economic activity; and Achieve economic and financial feasibility. <p>As part of this process, it is understood that the potential use of the Waterford to Rosslare rail line, which was closed in 2010, will be assessed. The recommendations of the All Island Strategic Rail Review will be considered for integration into the Strategy, subject to environmental assessment processes, as relevant. Pending completion of the Review the Strategy proposes to reserve the rail line to provide for future rail use.</p>	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p>Rail provisions would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</p> <p>Many of the projects referred to in this Chapter, as with other Chapters, are already provided for within other plans, programmes, strategies etc. that have already been subject to environmental assessment.</p> <p>The Strategy proposes to maximise opportunities offered by the existing rail network to enhance regional connectivity. Maximising the potential of the rail station will support better integration of land use planning and public transport. The various measures provided for would shorten journeys and improve quality for the customer. It would also help to facilitate a shift from car to heavy rail, thereby contributing towards sustainable mobility and associated positive effects (SEOs A, C, PHH and MA):</p> <ul style="list-style-type: none"> Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets; Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health; Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and Energy security. 				

Development arising from Rail measures – including a move to higher speeds, electrification of lines, dual tracking and the bringing back into service of lines – would be required to comply with, as relevant, the mitigation measures that have been integrated into the Strategy, including those measures concerning compliance with legislation such as the Habitats and Water Framework Directives (SEOs BFF and W) (see Section 9). Ecological corridors (as envisaged under Article 10 of the Habitats Directive) and species that live within these corridors (including those listed on annex IV of the Habitats Directive for strict protection such as otters and bats), have the potential to be impacted upon by these measures, both directly and in-combination with similar potential impacts arising from the cycle network – such impacts would be mitigated by measures, including those which have been integrated into the Strategy.

Reserving the Waterford to Rosslare rail line would help to secure future opportunities for sustainable mobility and associated positive environmental effects. It would also ensure that new development (and associated adverse environmental impacts) is not progressed along the line that would need to be demolished (with associated adverse environmental impacts) in the longer term.

The development of overhead power lines associated with the electrification of rail infrastructure could potentially present a collision risk to bird species. Achievable mitigation measures – including those which have been integrated into the Strategy - will ensure that this type of development will not impact on the Natura 2000 network of sites⁶³. Lower level plans, amendments to plans and projects arising through the implementation of the Strategy will themselves be subject to AA. Detailed information such as how birds use the estuary, particularly in relation to flight paths, feeding and foraging areas will inform lower tier decision making and AA. Mitigation may include:

- Looking at alternative methods of electrification that would remove the requirement for overhead lines; or
- Improving the visibility of the overhead lines by their arrangement or by incorporating line markers.

The relocation of Plunkett Station would facilitate intensification of use of public transport and compact development, thereby improving the status of SEOs relating to sustainable mobility and associated interactions (SEOs A, C, PHH and MA). It would also potentially conflict with the protection of environmental components including architectural heritage (SEO CH).

Provisions relating to rail that are provided for in this Chapter would present in various potentially significant adverse effects, in advance of mitigation, upon the full range of environmental components including emissions to air from diesel/generation of electricity for electrical vehicles (SEOs A, C and PHH), ecology (SEO BFF), land take/soil (SEO S), water bodies (SEO W), cultural heritage (SEO CH) and material assets (SEO MA). Although shifting from car to rail would facilitate net reductions in emissions to air (noise) (SEOs A and PHH), intensifying the use of existing infrastructure would be likely to result in increases at local level (SEOs A and PHH).

Lower-tier plans/strategies/etc., amendments to plans/strategies/etc. and projects are subject to their own SEA, EIA and AA processes as relevant and appropriate.

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to the Strategy as a direct result of development and activities under the Strategy and in combination with the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised.

⁶³ 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.

8.5.6 Roads

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>A review of committed and proposed road schemes was undertaken as part of the Strategy development and aligned to policy within the WMA. The road network was also reviewed with the aim of supporting new public transport, walking and cycling provision.</p> <p>Roads measures addressing the following issues are provided:</p> <ul style="list-style-type: none"> • Principles of Road Development • National Roads Requirements • National Roads Projects • City Centre Traffic Management • Regional and Local Roads Policy • Urban Roads and Streets • Additional River Crossing • Reduced Speed Limit 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p><i>The provisions of the Strategy with respect to Roads are consistent with those of the National Planning Framework and associated National Development Plan (Project 2040) and the Southern Regional Spatial and Economic Strategy. Further consideration will need to be given to all proposals.</i></p> <p><i>The Public Transport Measures would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</i></p> <p><i>As identified in the Strategy, the priority for road investment in this Strategy will be to maintain, renew, manage and operate the existing road infrastructure in a more efficient manner, as set out in the NIFTI Intervention Hierarchy. Other priorities include the need to provide multi-modal travel particularly on new roads within urban areas, increasing the liveability and place-making functions of the urban street network, and to manage the network to discourage through traffic in built up areas.</i></p> <p><i>The Principles of Road Development outlined by the Strategy will support the achievement of recent changes in national transport policy that seek to significantly increase in the use of public transport, cycling and walking and a reduction in the growth in private car travel.</i></p> <p><i>New roads would have the potential to facilitate more sustainable modes of transport (including bus, walking, cycling and personal mobility devices) and associated positive environmental effects including those relating to emissions, air quality and human health. New roads can help in reducing traffic, emissions and conflicts with human health from City Centre areas. New roads also have the potential to reduce congestion and make private transport by car more attractive. Improvements in technologies mean that emissions from newer cars (once operational) are reducing. Overall the Strategy is forecast to result in a reduction in emissions – see subsection 8.2.</i></p> <p><i>Potentially adverse environmental effects of constructing and operating roads, including road widening and improved road infrastructure, include:</i></p> <ul style="list-style-type: none"> • Temporary land take (SEO S) and loss of built/amenity assets and infrastructure (SEO MA), such as parts of public open spaces, parks and recreational areas and individual houses, for construction areas; • Permanent land take (SEO S) and loss of built/amenity assets and infrastructure (SEO MA), such as parts of public open spaces, parks and recreational areas and individual houses; • Potential loss of/disturbance to biodiversity including areas of habitat and fauna species (SEO BFF) - these may be temporary in the case of construction areas; • Potential impacts upon the status of water bodies (SEO W); • Potential loss of designated and unknown archaeology (SEO CH); and • Traffic, noise, dust and vibration during construction and operation (SEO PHH). <p><i>Effects in riparian zones where new crossings of surface waters are progressed would need to be considered carefully to ensure the protection of the integrity of ecologically designated European sites (SEO BFF) and the status of water bodies (SEO W), including morphological status.</i></p>				

As identified in the Strategy, all routes and alignments are indicative and subject to change through the statutory scheme appraisal process. Projects will be required to be subject to lower-tier environmental assessment and detailed corridor and route selection processes as relevant (including those arising from SEA recommendation “Corridor and Route Selection Process” integrated into Chapter 17).

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to roads, including in combination with other Strategy provisions and the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised. Environmental mitigation would also be provided through any environmental assessment process that is required.

8.5.7 Parking

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
Measures addressing the following issues are provided: <ul style="list-style-type: none"> • Park & Stride / Park & Cycle • Strategic Park & Ride • Mobility Hubs • Parking Strategy 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p><i>The Parking Measures would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</i></p> <p><i>As identified in the Strategy, the availability and price of car parking within the WMA makes the private car attractive to use compared to sustainable transport alternatives - walking, cycling and public transport. Management of parking can and should be used as an effective demand management tool to discourage private car journeys, particularly for shorter trips across the WMA. For longer journeys, the emphasis will be on discouraging through trips in urban areas. The provision of Park and Ride and Park and Stride facilities, along with modern coherent interchange between walking, cycling and public transport, aims to make sustainable transport options more appealing compared to the private car. The measures provided would help to facilitate increased use of more sustainable modes of transport and associated positive environmental effects including (SEOs A, C, PHH and MA):</i></p> <ul style="list-style-type: none"> • Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets; • Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health; • Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and • Energy security. <p><i>In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in</i></p>				

lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to roads, including in combination with other Strategy provisions and the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised. Environmental mitigation would also be provided through any environmental assessment process that is required.

8.5.8 Freight, Delivery and Servicing

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
Measures addressing the following issues are provided: <ul style="list-style-type: none"> HGV Management Delivery and Servicing Strategy Strategy for Sustainable Freight Distribution Rail Freight 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p>The Freight, Delivery and Servicing Provisions would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</p> <p>As identified in the Strategy, to meet the NPF growth projections, construction of new homes, offices and schools will result in the increased movement of freight. There will also be a greater level of delivery and servicing activity and waste management. While presenting challenges in terms of safety, congestion, air and noise pollution, the clustering of activities - allied to an improvement in the strategic transport infrastructure - offers the possibility of innovative approaches to mitigate the impact of freight activity (SEOs A, C, PHH and MA).</p> <p>Lower-tier plans/strategies/etc., amendments to plans/strategies/etc. and projects are subject to their own SEA, EIA and AA processes as relevant and appropriate.</p> <p>In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.</p> <p>The various types of environmental effects likely to arise with respect to roads, including in combination with other Strategy provisions and the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.</p> <p>The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised. Environmental mitigation would also be provided through any environmental assessment process that is required.</p>				

8.5.9 Supporting Measures and Integration

	Likely to Improve status of SEOs	Potential Conflict with status of SEOs- likely to be mitigated	Probable Conflict with status of SEOs- unlikely to be mitigated	No Likely interaction with status of SEOs
<p>Measures addressing the following issues are provided:</p> <ul style="list-style-type: none"> • Local Transport Plans • Active Travel Officers • Urban Design in Transport Schemes • Universal Design/Age-Friendly Public Realm • Low Traffic Neighbourhoods • The Road User Hierarchy • Car Free Zones • Home Zones • Smarter Travel Programme • Travel Plans • School Planning and Design • Cycle Training • School Travel Strategy • Green Schools • Safe Routes to School • Public Information and Marketing • Enforcement of Road Traffic Laws • Mobility as a Service • Intelligent Transport Systems • Car Clubs • Dynamic Parking/Loading Bays • EV Charge PoSMs • Monitor Evolution of Autonomous Vehicles • Smart Ticketing • Fares Review • Other Emerging Personal Mobility Modes • Small Public Service Vehicles • Equality in Transport • Inclusivity Campaigns • Equality Impact Assessments 	A C PHH BFF MA S W L CH	A C PHH BFF MA S W L CH		
<p>Commentary:</p> <p><i>The Supporting and Integration Measures would contribute towards the achievement of the selected alternatives for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).</i></p> <p><i>As identified in the Strategy, WMATS will set the framework for a significantly enhanced transport system that supports the future growth of the WMA, by increasing the attractiveness of sustainable travel and reducing the dependency on the private car. This will contribute to lessening the transport impacts on climate change in the WMA. The role of supporting measures is to complement any infrastructure investment. The full benefits of the significant investment that will be delivered on foot of WMATS cannot be achieved through the provision of infrastructure alone and must be combined with the implementation of measures that support the best use of that infrastructure. The supporting measures proposed in WMATS will be essential to the creation of physical, social and cultural environments where walking, cycling and public transport are attractive, practical and logical options for the majority of citizens' daily travel needs.</i></p> <p><i>The measures provided would help to facilitate increased use of more sustainable modes of transport and associated positive environmental effects including (SEOs A, C, PHH and MA):</i></p> <ul style="list-style-type: none"> • <i>Reductions in/limits in increases of greenhouse gas emissions and associated achievement of legally binding greenhouse gas emissions targets:</i> 				

- Reductions in/limits in increases of all emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement of air quality and protection of human health;
- Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and
- Energy security.

In combination with other parts of the Strategy and other plans and programmes, including those from the land use sector, these provisions would help to: improve the development potential of certain zoned lands; facilitate consolidation of the City; facilitate reuse and regeneration of brownfield lands; and reduce sprawl (SEOs PHH, MA and S). In this way, these provisions would help to facilitate a higher efficiency of land utilisation, increases in sustainable mobility and a reduction in the need to develop greenfield lands. The reduced need to develop greenfield lands further away from existing urban areas would result in lower adverse effects upon environmental components such as ecology (SEO BFF), water (SEO W) landscape designations (SEO L), archaeological and architectural heritage (SEO CH) and soil (SEO S). Land use zoning objectives in force through existing land use plans have already been subject to SEA and AA processes. Any variation to or review of these plans and associated zoning objectives would be required to be subject to SEA and AA processes. Potential significant adverse effects on various environmental components (SEOs A, C, PHH, BFF, MA, S, W, L and CH) as a result of development would be mitigated by environmental requirements, including those contained within the relevant land use plans.

The various types of environmental effects likely to arise with respect to roads, including in combination with other Strategy provisions and the wider planning framework (including that related to land use planning), are detailed under subsections 8.2 to 8.4 above, including at Table 8.3.

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about various changes to the emerging Strategy (these are reproduced at Section 9 of this SEA Environmental Report). By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that: the potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and the beneficial environmental effects of implementing the Strategy are maximised. Environmental mitigation would also be provided through any environmental assessment process that is required.

Section 9 Mitigation Measures

9.1 Introduction

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Strategy. Various environmental sensitivities and issues have been communicated to the Authority through the SEA and Appropriate Assessment (AA) processes.

By integrating all SEA and AA recommendations into the Strategy, the Authority is helping to ensure that:

- The potential significant adverse effects of implementing the Strategy are avoided, reduced or offset; and
- The beneficial environmental effects of implementing the Strategy are maximised.

Mitigation was achieved through the following:

- Early work undertaken to ensure contribution towards environmental protection and sustainable development;
- Consideration of alternatives; and
- Integration of individual measures into the Strategy.

9.2 Early work undertaken to ensure contribution towards environmental protection and sustainable development

Far in advance of the placing of the Strategy (and associated SEA and AA) on public display, the National Transport Authority undertook early work that has helped to ensure that the Strategy contributes towards environmental protection and sustainable development.

Many proposals included within the Strategy have been already included within the National Planning Framework (and associated National Development Plan), Southern Regional Spatial and Economic Strategy and the Statutory land use plans of planning authorities across the Strategy area.

The Strategy's Aim⁶⁴ and Objectives⁶⁵, to which sustainable development and environmental protection and management are central, provide the basis for its detailed provisions.

⁶⁴ To set the framework for an accessible, high-quality and integrated transport network that enables the sustainable growth of the Waterford Metropolitan Area as a key regional driver of growth in the South-East Region, and an international competitive European city region as envisaged by the National Planning Framework 2040.

⁶⁵ The Strategic Objectives of the Strategy are as follows:

- To meet the demand generated by future growth of the WMA through the provision of an efficient transport network.
- To prioritise sustainable transport and active travel to reduce car dependency.
- The provision of a high level, citywide public transport system connecting to key destinations within high demand corridors.
- To increase transport capacity where needed to achieve the strategy outcomes.
- To deliver a fully accessible and inclusive transport system.
- To enhance the public realm of the WMA through demand management measures and transport interventions.
- To minimise the impact of motorised traffic in urban centres.
- To identify and protect key strategic routes for the movement of freight traffic.

9.3 Consideration of alternatives

A number of reasonable alternatives were identified for the Strategy that were assessed by the SEA process (see Section 7). The findings of this assessment informed the selection of preferred alternatives, facilitating an informed choice with respect to the type of Strategy that was prepared, placed on public display and adopted.

9.4 Integration of individual measures into the Strategy

The SEA and AA processes that have been undertaken alongside the preparation of the Strategy have brought about changes to the emerging Strategy thereby enabling the mitigation of any potentially adverse environmental effects. All recommendations made by the SEA and AA processes are identified on Table 9.1 and Table 9.2 below and have been integrated into the Strategy.

These tables also link the various mitigation measures to specific environmental components and the potential adverse effects that would be present if the changes were not made. The measures generally benefit multiple environmental components i.e. a measure providing for the protection of biodiversity, flora and fauna could beneficially impact upon the minimisation of flood risk and the protection of human health, for example.

Table 9.1 SEA/AA recommendations included within the Strategy

Strategy Section No.	SEA/AA Recommended Text
17. Environmental Protection and Management	<p>Introduction</p> <p>Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) have both been undertaken alongside the preparation of the Strategy. All recommendations arising from the SEA and AA processes have been integrated into the Strategy. Many of these recommendations have been set out in the SEA Environmental Report; however, some of the more strategic recommendations are detailed below. Compliance with these measures will facilitate environmental protection and management.</p>
17. Environmental Protection and Management	<p>Regulatory Framework for Environmental Protection and Management</p> <p>In implementing this Strategy, the Authority will cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management and will ensure that plans, programmes and projects comply with EU Directives, including the Habitats Directive (92/43/EEC), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (2011/92/EU, as amended by 2014/52/EC) and the Strategic Environmental Assessment Directive (2001/42/EC), and relevant transposing Regulations.</p>
17. Environmental Protection and Management	<p>Lower-level Decision Making</p> <p>Lower levels of decision making and environmental assessment should consider the environmental sensitivities identified in Section 4 of the SEA Environmental Report, including the following:</p> <ul style="list-style-type: none"> • Special Areas of Conservation and Special Protection Areas; • Features of the landscape that provide linkages/connectivity to designated sites (e.g. watercourses and areas of semi-natural habitat, such as linear woodlands); • Salmonid Waters; • Shellfish Waters; • Freshwater Pearl Mussel catchments; • Nature Reserves; • Natural Heritage Areas and proposed Natural Heritage Areas; • Areas likely to contain a habitat listed in Annex 1 of the Habitats Directive; • Entries to the Record of Monuments and Places and Zones of Archaeological Potential; • Entries to the Record of Protected Structures; • Un-designated sites of importance to wintering or breeding bird species of conservation concern; • The National Biodiversity Action Plan; • Architectural Conservation Areas; and • Relevant landscape designations. <p>Where developments, arising from this strategy, do not require Environmental Impact Assessment, the implementing agency/agencies will consider the preparation of a non-statutory Ecological Impact Assessment (EcIA) in order to assess the potential impacts to biodiversity.</p>
17. Environmental Protection and Management	<p>Corridor and Route Selection Process</p> <p>The following Corridor and Route Selection Process will be undertaken for relevant infrastructure:</p> <p>Stage 1 – Route Corridor Identification, Evaluation and Selection</p> <ul style="list-style-type: none"> • Environmental constraints (including those identified in Section 4 of the SEA Environmental Report) and opportunities (such as existing linear infrastructure) will assist in the identification of possible route corridor options; • Potentially feasible corridors within which infrastructure could be accommodated will be identified and these corridors assessed. The selection of the preferred route corridor will avoid constraints and meet opportunities to the optimum extent, as advised by relevant specialists; and • In addition to the constraints identified above, site-specific field data may be required to identify the most appropriate corridors. <p>Stage 2 – Route Identification, Evaluation and Selection</p> <ul style="list-style-type: none"> • Potentially feasible routes within the preferred corridor will be identified and assessed. The selection of preferred routes will avoid constraints and meet opportunities to the optimum extent, as advised by relevant specialists, taking into account project level information and potential mitigation measures that are readily achievable; • In addition to the constraints identified above, site-specific field data may be required to identify the most appropriate routes; and • In addition to environmental considerations, the identification of route corridors and the refinement of the route lines is likely to be informed by other considerations.

Strategy Section No.	SEA/AA Recommended Text
17. Environmental Protection and Management	<p>Appropriate Assessment</p> <p>All projects and plans arising from this Strategy will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and subsequent Appropriate Assessment where necessary, that:</p> <ul style="list-style-type: none"> • The Plan or project will not give rise to adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or • The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or • The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.
17. Environmental Protection and Management	<p>Protection of Natura 2000 Sites</p> <p>No plans or projects giving rise to adverse effects on the integrity of European sites (cumulatively, directly or indirectly) arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Strategy (either individually or in combination with other plans or projects)⁶⁶.</p>
17. Environmental Protection and Management	<p>Climate Change, Emissions and Energy</p> <p>As identified in the SEA Environmental Report that accompanies this Strategy, the Strategy facilitates sustainable mobility and associated positive effects, including those relating to:</p> <ul style="list-style-type: none"> • Reductions in greenhouse gas emissions and associated achievement of legally binding targets; • Reductions in emissions to air and associated achievement of air quality objectives, thereby contributing towards improvement or air quality and protection of human health; • Reductions in consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and • Energy security. <p>In implementing the Strategy, the Authority will support relevant provisions contained in the following documents (and any superseding revisions of same): National Energy and Climate Plan (2021); the Waterford Climate Change Adaptation Strategy (2019); the Climate Action Plan (2021); the National Climate Change Adaptation Framework (2018); and the Department of Transport's Climate Change Sectoral Adaptation Plan for Transport Infrastructure (2019), which builds on the 2017 "Adaptation Planning – Developing Resilience to Climate Change in the Irish Transport Sector".</p> <p>Cognisant of the imperative to reduce emissions, the Authority will seek to ensure primacy for transport options that provide for unit reductions in carbon emissions. This can most effectively be done by promoting public transport, walking and cycling, and by actively seeking to reduce car use in circumstances where alternative options are available.</p> <p>During the preparation and/or review of policies and plans relating to climate change, carbon emissions and energy usage, the Authority will seek to integrate Strategy objectives, as appropriate.</p>
17. Environmental Protection and Management	<p>Other SEA/AA Recommendations</p> <p>In implementing the Strategy, the Authority will ensure that the measures included in Table 9.2 of the SEA Environmental Report and Table 5.1 of the AA Natura Impact Statement are complied with. These measures encompass:</p> <ul style="list-style-type: none"> • Contributing towards compliance with relevant National Legislation (including the Wildlife Acts 1976 and 2010, as amended). • A variety of measures relating to the protection, conservation and enhancement of biodiversity. • Annex IV species under the Habitats Directive. • Ensuring the undertaking of appropriately detailed surveying and assessment at project/EIA level.

⁶⁶ 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 project to proceed; and c) Adequate compensatory measures in place.

The SEA and AA recommendations detailed in Table 9.2 below will be integrated into the Strategy through the commitment described in Table 9.1 above entitled “Other SEA/AA Recommendations”. These measures are linked to specific environmental components and the potential adverse effects that would be present if the measures were not integrated into the Strategy.

Table 9.2 Provisions referred to in the Strategy under “Other SEA/AA Recommendations”

Environmental component benefitting	Potential adverse effect mitigated	Requirement
Various	Various – see below	<p>Construction and Environmental Management Plans Construction Environment Management Plans (CEMPs) shall be prepared in advance of the construction of relevant projects and implemented throughout. Such plans shall incorporate relevant mitigation measures which have been integrated into the Strategy and any lower tier Environmental Impact Statement or Appropriate Assessment. CEMPs typically provide details of intended construction practice for the proposed development, including:</p> <ul style="list-style-type: none"> a. location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse, b. location of areas for construction site offices and staff facilities, c. details of site security fencing and hoardings, d. details of on-site car parking facilities for site workers during the course of construction, e. details of the timing and routing of construction traffic to and from the construction site and associated directional signage, f. measures to obviate queuing of construction traffic on the adjoining road network, g. measures to prevent the spillage or deposit of clay, rubble or other debris, h. alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public right of way during the course of site development works, i. details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels, j. containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater, k. disposal of construction/demolition waste and details of how it is proposed to manage excavated soil, l. a water and sediment management plan, providing for means to ensure that surface water runoff is controlled such that no silt or other pollutants enter local water courses or drains, m. details of a water quality monitoring and sampling plan. n. if peat is encountered - a peat storage, handling and reinstatement management plan. o. measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed). p. appointment of an ecological clerk of works at site investigation, preparation and construction phases. q. details of appropriate mitigation measures for lighting specifically designed to minimise impacts to biodiversity and ecological functioning.
Various	Various – see below	<p>Maintenance Plan Lower tier assessments should examine the need for Maintenance Plans informed by environmental considerations to be prepared and implemented.</p>
Air and Climatic Factors	Emissions to air and associated issues	<p>Please refer to the overall approach and detail provided for by the Strategy, which focusses significant levels of investment in sustainable transport modes and addresses Climate Action Management at Chapter 14. The Strategy will support the ‘Avoid-Shift-Improve’ hierarchy approach, including contributing towards efforts to: Avoid and reduce the need for travel; Shift to sustainable modes; and Improve efficiency</p> <p>Air and Energy Contribute towards: compliance and consistency with air quality legislation and the National Clean Air Strategy, the National Air Pollution Control Programme, the National Climate Action Plan, the National Policy Framework for Alternative Fuels Infrastructure for Transport and the Department of Transport’s Smarter Travel – A Sustainable Transport Future; greenhouse gas emission targets; management of noise levels, including taking into account available noise maps and Noise Action Plans (including provisions relating to the preservation of Quiet Areas); and reductions in energy usage.</p> <p>Climate Adaptation and Resilience Improve resilience and adaptation to climate change by taking into account issues including the following in the siting and design of projects:</p> <ul style="list-style-type: none"> • Extreme precipitation and risk of high river flows and associated implications including those relating to pluvial and fluvial flooding, bridge scour, soil erosion and landslides; • Sea level rise and storm surge and associated implications including those relating to coastal erosion and coastal/estuarine flooding; and • Extreme temperatures and associated implications including those relating to the operation of transport and ancillary infrastructure and services.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
		Noise Contribute towards: compliance with air quality legislation; greenhouse gas emission targets; management of noise levels, including taking into account available noise maps and Noise Action Plans (including provisions relating to the preservation of Quiet Areas) and the National Planning Framework National Policy Objective 65 to 'Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans'; and reductions in energy usage.
Population and human health	Potential interactions if effects upon environmental vectors such as air are not mitigated	Human Health Assess proposals for development in terms of, inter alia, potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed developments would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, mitigation measures shall be introduced in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level.
		Green/Blueways and Existing Green Infrastructure Proposals for greenway/blueway development should contribute towards the protection or enhancement of existing green infrastructure and have regard to the EPA and HSE research and associated toolkits into the benefits of blue and green spaces.
Biodiversity and flora and fauna	- Arising from both construction and operation of transport infrastructure and services and associated facilities/infrastructure: loss of/damage to biodiversity in designated sites, 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. - Disturbance (e.g. due to noise and lighting along	Protection of Biodiversity including Natura 2000 Network Contribute, as appropriate, towards the protection of designated ecological sites including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs); Salmonid Waters; Shellfish Waters; Freshwater Pearl Mussel catchments; Flora Protection Order sites and species; Wildlife sites (including Nature Reserves); the Water Framework Directive Register of Protected Areas; Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs); Wildfowl Sanctuaries (see S.I. 192 of 1979); and Tree Preservation Orders (TPOs). Contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents): <ul style="list-style-type: none"> • EU Directives, including the Habitats Directive (92/43/EEC, as amended)⁶⁷, the Birds Directive (2009/147/EC)⁶⁸, the Environmental Liability Directive (2004/35/EC)⁶⁹, the Environmental Impact Assessment Directive (2011/92/EU, as amended by 2014/52/EC), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). • National legislation, including the Wildlife Acts 1976 and 2010 (as amended), the Planning and Development Act 2000 (as amended) and associated Regulations, Environmental Impact Assessment Regulations, the European Union (Water Policy) Regulations 2003 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), the European Communities (Environmental Liability) Regulations 2008 (as amended)⁷⁰ and the Flora Protection Order 2015. • National policy guidelines (including any clarifying Circulars or superseding versions of same), including the "Landscape and Landscape Assessment" Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2021 and Appropriate Assessment Guidance 2010. • Catchment and water resource management Plans, including the relevant River Basin Management Plan and Flood Risk Management Plan (including any superseding versions of same). • Biodiversity Plans and guidelines, including the 3rd National Biodiversity Plan 2017-2023 (including its measures relating to ecological corridors and any superseding version of same) and the All Ireland Pollinator Plan. • Freshwater Pearl Mussel Regulations (S.I. 296 of 2009) (including any associated designated areas or management plans). • Ireland's Environment 2020 - An Assessment (EPA, 2020, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.

⁶⁷ Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

⁶⁸ Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

⁶⁹ Including protected species and natural habitats.

⁷⁰ Including protected species and natural habitats.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
	transport corridors) and displacement of protected species and/or coastal squeeze. - Effects in riparian zones where new crossings of waters are progressed. - Potential effects on vegetation from transport emissions.	NPWS & Integrated Management Plans Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for European sites involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans. The NPWS's current priority is to identify site specific conservation objectives; management plans may be considered after this is done. Where Integrated Management Plans are being prepared for European sites (or parts thereof), the National Parks and Wildlife Service shall be engaged with in order to ensure that plans are fully integrated with the Strategy and other plans and programmes, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations, including those of local communities.
		Coastal Zone Management Support measures to protect the coast, the coastal edge and coastal/estuarine habitats; and facilitate an Integrated Coastal Zone Management approach to ensure the conservation, management and projection of man-made and natural resources of the coastal/estuarine zone.
		Biodiversity and Ecological Networks Contribute towards the protection, conservation and enhancement of biodiversity and ecological connectivity, including field boundaries, woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, geological and geo-morphological systems, other landscape features, natural lighting conditions, and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive. Where field boundaries must be removed, mitigation measures, aimed at ensuring that habitat fragmentation does not occur, should be considered and incorporated where relevant. Where practicable and relevant, opportunities will be explored as to how to address any inadequate existing mitigation measures or impeded passage when existing roads are being improved or upgraded.
		Protection of Riparian Zone and Waterbodies and Watercourses Help to ensure that waterbodies and watercourses are protected from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include the preservation habitat features/structure, such as treeline density, and protection buffers in riverine, wetland and coastal/estuarine areas, as appropriate.
		Biodiversity including non-designated biodiversity Ensure the undertaking of appropriately detailed surveying and assessment at project/EIA level (including fulfilling requirements under the Wildlife Acts) and minimisation of loss of biodiversity, including hedgerows, old trees, tree lines, areas of vegetation or species such as Barn Owl (the Transport Infrastructure Ireland Publication 'Survey and Mitigation Standards for Barn Owls to inform the Planning, Construction and Operation of National Road Projects' should be considered in this regard), as a result of the development of new or widened infrastructure. Help to ensure the appropriate protection of non-designated habitat features, landscapes and biological diversity. Where possible, to strive to achieve no net loss of these features as a result of new development granted permission under the Plan. Contribute towards the protection and management of fisheries ⁷¹ as appropriate and take into account Inland Fisheries Ireland's "Planning for Watercourses in the Urban Environments" (2020) for developments along watercourses.
		Lighting Sensitive Species Lighting fixtures should provide only the amount of light necessary for personal safety and should be designed so as to avoid creating glare or emitting light above a horizontal plane. Lighting fixtures should have minimum environmental impact and their selection consider EUROBATs and Dark Sky lighting recommendations, thereby contributing towards the protection of amenity and the protection of light sensitive species such as bats.
		Non-native invasive species Support, as appropriate, both the National Parks and Wildlife Service's and Local Authority's efforts to seek to control and manage the spread of non-native invasive species on land and water. Where the presence of non-native invasive species is identified at the site of any proposed development or where the proposed activity has an elevated risk of resulting in the presence of these species, details of how these species will be managed and controlled will be required.
		National Peatlands Strategy Support, as appropriate, any relevant recommendations contained in the National Peatlands Strategy 2015.

⁷¹ Including with regard to water quality, surface water hydrology, fish spawning and nursery areas, passage of migratory fish, ecosystem structure and functioning and sport and commercial fishing and angling resources.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
Material Assets	<ul style="list-style-type: none"> - Generation of construction waste - Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure 	Also see Construction and Environmental Management Plans provision above
		Construction Waste Demonstrate that all waste arising during construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Acts and regulations and any of the relevant Local Authorities Waste Management Plans. Construction Waste Management Plans will be implemented to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment, July 2006.
		Waste Creation Support the minimisation of waste creation and promote a practice of reduce, reuse and recycle where possible.
		Waste Disposal Safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.
		Public Assets and Infrastructure Contribute towards the protection of public assets and infrastructure including resources such as: public open spaces, parks and recreational areas; public buildings and services; and utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.).
Water	<ul style="list-style-type: none"> - Adverse impacts upon the status of water bodies and entries to the WFD Register of Protected Areas, arising from changes in quality, flow and/or morphology - Increase in the risk of flooding 	Also see Construction and Environmental Management Plans provision above and measures under soil above and material assets below
		Water Framework Directive and associated legislation Contribute towards, as appropriate, the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, wetlands, groundwater, coastal waters and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same). To support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.
		River Basin Management Plan Support the implementation of the relevant recommendations and measures as outlined in the most up to date River Basin Management Plan, and associated Programme of Measures. Proposed plans, programmes and projects shall not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands. Also to have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 and 36 which provide guidance on exemptions to the environmental objectives of the Water Framework Directive.
		Bathing Water Contribute towards the achievement of the requirements of the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008) and EU Mandatory Values, as a minimum, and EU Guide Values, where possible.
		Flood Risk Management Guidelines Comply with the Planning System and Flood Risk Management Guidelines (2009, DEHLG/OPW) (including any clarifying Circulars or superseding versions of same) and relevant outputs of the Catchment and Flood Risk Assessment and Management Studies.
		Surface Water Drainage and Sustainable Drainage Systems (SuDs) Ensure that new development is adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems as appropriate.
Landscape	Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape	Landscape Designations Contribute, as appropriate, towards the protection of county and local level landscape designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.
		Amenity Contribute towards the protection of areas of amenity value and minimise losses, as a result of the development of new or widened infrastructure.
		Coastal/Estuarine Areas and Seascapes Contribute towards the protection of landscape character and the visual potential of the coast/estuarine areas and conserve the character and quality of seascapes.
		National Landscape Strategy Support, as appropriate, any relevant recommendations contained in the National Landscape Strategy for Ireland 2015-2025.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
Cultural Heritage	Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities, including as a result of increasing traffic flows.	Archaeological Heritage Contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage, in particular by implementing the relevant provisions of the Planning and Development Act 2000 (as amended) and the National Monuments Act, 1930 (as amended). Projects that are progressed under the Strategy will be subject to Environmental Impact Assessment, as appropriate, including detailed archaeological impact assessment as relevant. Any alterations to archaeological heritage or its context, including that which may arise as a result of the development of new or widened infrastructure, shall be in compliance with relevant legislation.
		Protection of Archaeological Sites Contribute, as appropriate, towards the protection of archaeological sites and monuments and their settings, archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are the subject of Preservation Orders or have been registered in the Register of Historic Monuments. Contribute, as appropriate, towards the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.
		Consultation Consult with the National Monuments Service in relation to proposed developments adjoining archaeological sites.
		Underwater Archaeological Sites Contribute, as appropriate, towards the protection and preservation of underwater archaeological sites in riverine, intertidal and sub-tidal locations.
		Architectural Heritage Contribute towards the protection of architectural heritage by complying, as appropriate, with the legislative provisions of the Planning and Development Act 2000 (as amended) in relation to architectural heritage and the policy guidance contained in the Architectural Heritage Protection Guidelines 2011 (and any updated/superseding document). Any alterations to architectural heritage or its context, including that which may arise as a result of the development of new or widened infrastructure, shall be in compliance with relevant legislation.
Soil	<ul style="list-style-type: none"> - Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of transport and associated transport facilities/infrastructure. - Adverse impacts on features or areas of geological/geomorphological interest as a result of construction of transport and associated transport facilities/infrastructure. - Potential for increase in coastal/river bank erosion. 	Also see requirements under other heading of water above.
		Soil Protection and Contamination Ensure that adequate soil protection measures are undertaken where appropriate. Adequate and appropriate investigations shall be carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work, where brownfield development is proposed.
		Areas of geological interest and GSI Datasets Contribute towards the appropriate protection and maintenance of the character, integrity and conservation value of features or areas of geological interest. Take GSI datasets into account as appropriate, including those relating to geoheritage, groundwater, geohazards, natural resources and coastal vulnerability.
		Land Take Contribute towards the target of the National Planning Framework's (2018) SEA to "Maintain built surface cover nationally to below the EU average of 4%."

Section 10 Monitoring Programme

10.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures which will be used in order to monitor the likely significant effects of implementing the Strategy. It has been guided by the EPA guidance on this issue, "Guidance on SEA Statements and Monitoring" (2020).

Monitoring can both demonstrate the positive effects facilitated by the Plan and can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

The occurrence of significant adverse environmental effects not predicted and mitigated by this assessment, which are directly attributable to the implementation of the Strategy, would necessitate consideration of these effects in the context of the Strategy and potential remediation action(s) and/or review of part(s) of the Strategy.

The Strategy implementation, monitoring and reporting will be aligned with the environmental monitoring required under SEA legislation.

10.2 Indicators and Targets

Monitoring is based around indicators which allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives identified in Section 5 and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) which were identified with regard to the relevant strategic actions. Monitoring measures chosen for the SEA of the Strategy align with those used in the SEA of the Southern RSES and in the SEAs of other land use plans across the Region. This consistency across the hierarchy of land use/transport planning will improve the efficiency and effectiveness of future monitoring.

Table 10.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental

effects of implementing the Strategy, if unmitigated.

Monitoring is an ongoing process and the programme allows for flexibility and the further refinement of indicators and targets. The Monitoring Programme may also be updated to deal with specific environmental issues - including unforeseen effects - as they arise.

10.3 Sources

The Strategy forms part of the wider land use planning framework comprising a hierarchy of policies, plans, programmes, etc. This wider framework, including the National Planning Framework and the Southern RSES, is subject to its own SEA (and associated monitoring) requirements. At lower tiers of the hierarchy, individual projects will be subject to their own monitoring requirements, as relevant.

In implementing the Monitoring Programme, the Authority will take into account this hierarchy of planning and environmental monitoring.

The monitoring programme encompasses existing monitoring programmes and internal review of Strategy implementation. Appropriate levels of surveying will be undertaken commensurate with the level in the decision-making hierarchy of the plan or project.

Sources for indicators may include existing monitoring databases (including those maintained by planning authorities and national/regional government departments and agencies) and the output of lower-tier environmental assessment and decision making (including a review of project approvals granted and associated documents and the output of any EIA monitoring programmes).

10.4 Reporting

A stand-alone Monitoring Report on the significant environmental effects of implementing the Strategy will be prepared in advance of the beginning of the review of the

Strategy. This report will address the indicators set out on Table 10.1. The Authority is responsible for the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of remedial action.

10.5 Thresholds

Thresholds at which corrective action will be considered include:

- Impacts on the integrity of European sites as a result of Strategy projects that have not been granted permission following an assessment of imperative reasons of overriding public interest (IROPI);
- Complaints received from statutory consultees regarding avoidable impacts on any environmental components resulting from development which is granted permission under the Strategy;
- Court cases taken by the Department of Housing, Local Government and Heritage regarding impacts upon archaeological heritage from development which is provided for by the Strategy;
- Fish kills directly attributable to development which is provided for by the Strategy; and
- The occurrence of flood events which are directly attributable to development which is provided for by the Strategy.

Table 10.1 Selected Indicators, Targets and Monitoring Sources

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 previous National Travel Survey levels 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 previous 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 Internal review of Strategy implementation 	<ul style="list-style-type: none"> Where proportion of population shows increase in private car use above previous CSO figures, the Authority will coordinate with the Regional Assembly, the DHLGH, DECC and other planning authorities to develop a tailored response.
Climatic Factors	C	<ul style="list-style-type: none"> Implementation of the Strategy, which will contribute towards and facilitate climate action 	<ul style="list-style-type: none"> To implement the Strategy, which will contribute towards and facilitate climate action 	<ul style="list-style-type: none"> Internal review of Strategy implementation EPA Annual National Greenhouse Gas Emissions Inventory reporting Climate Action Regional Office Consultations with Department of Environment, Climate and Communications CSO data 	<ul style="list-style-type: none"> Review internal systems Where targets are not achieved, the Authority will liaise with the Regional Assembly and the Dublin Climate Action Regional Office to establish reasons and develop solutions. Where trends toward carbon reduction are not recorded, the Authority will liaise with the Regional Assembly and the Dublin Climate Action Regional Office to establish reasons and develop solutions.
		<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"> 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 Strategy 		
		<ul style="list-style-type: none"> Carbon dioxide (CO₂) emissions across the transport sector 	<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 transport sector 		
		<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 previous levels 	<ul style="list-style-type: none"> Decrease in the proportion of journeys made by residents of the WMA using private fossil fuel-based car compared to previous levels 		
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above previous CSO figures 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures 		

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Population and Human Health	PHH	<ul style="list-style-type: none"> Implementation of the Strategy, which will contribute towards and facilitate economic growth 	<ul style="list-style-type: none"> To implement the Strategy, which will contribute towards and facilitate economic growth 	<ul style="list-style-type: none"> Internal review of Strategy implementation Consultations with the Health Service Executive and EPA CSO data Internal review of Strategy implementation 	<ul style="list-style-type: none"> Review internal systems Consultations with the Health Service Executive and EPA Where proportion of population shows increase in private car use above previous CSO 2016 figures, coordinate with the Regional Assembly, the DHLGH, DECC and other planning authorities to develop a tailored response Review internal systems
		<ul style="list-style-type: none"> Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Strategy 	<ul style="list-style-type: none"> No spatial concentrations of health problems arising from environmental factors as a result of implementing the Strategy 		
		<ul style="list-style-type: none"> Proportion of people reporting regular cycling / walking to school and work above previous CSO figures Access to sustainable modes of transport 	<ul style="list-style-type: none"> Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures To improve access to sustainable modes of transport 		
Biodiversity, Flora and Fauna ⁷²	BFF	<ul style="list-style-type: none"> Condition of European sites 	<ul style="list-style-type: none"> Relevant projects to integrate considerations relating to European sites, other nature conservation sites, ecological networks, protected species and ecosystem services 	<ul style="list-style-type: none"> Department of Housing, Local Government and Heritage report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years). Department of Housing, Local Government and Heritage's National Birds Directive Monitoring Report for the under Article 12 (every 3 years) Consultations with the NPWS Internal review of new projects 	<ul style="list-style-type: none"> Where condition of biodiversity and flora and fauna is found to be deteriorating this will be investigated with the DHLGH to establish if the pressures are related to Strategy actions / activities. A tailored response will be developed in consultation with these stakeholders in such a circumstance. Review internal systems
		<ul style="list-style-type: none"> Number of projects that have integrated ecosystem services considerations 	<ul style="list-style-type: none"> Relevant projects to have regard to the heritage and biodiversity plans of planning authorities 		
		<ul style="list-style-type: none"> EIAs and AAs as relevant for new projects 	<ul style="list-style-type: none"> Screen for and undertake EIA and AA as relevant for new projects 		
		<ul style="list-style-type: none"> Compliance of planning permissions with Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 17 of the Strategy 	<ul style="list-style-type: none"> For new projects only to be progressed where they demonstrate that they comply with all Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 17 of the Strategy 		

⁷² Monitoring to include biodiversity loss and enhancement as relevant.
CAAS for the National Transport Authority

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Water	W	<ul style="list-style-type: none"> • Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD • Number of incompatible developments permitted within flood risk areas • Integration of sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects 	<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 • Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk • Integrate sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects as relevant 	<ul style="list-style-type: none"> • EPA Monitoring Programme for WFD compliance • Internal review of Strategy implementation 	<ul style="list-style-type: none"> • Where water bodies are failing to meet at least good status as a result of development under the Strategy, this will be investigated with the DHLGH Water Section, the EPA Catchment Unit, the Regional Assembly and, as relevant, Irish Water. A tailored response will be developed in consultation with these stakeholders in such a circumstance • Where marine water bodies are failing to meet good ecological status as a result of development under the Strategy, this will be interrogated with the Marine Institute and the DHLGH. A tailored response will be developed in consultation with the Marine Institute and DHLGH in such a circumstance • Where new projects are on flood zones, these should be implemented in compliance with the Flood Risk Management Guidelines and include appropriate flood risk mitigation and management measures
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 and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Strategy 	<ul style="list-style-type: none"> • No developments permitted which result in avoidable adverse visual impacts on the landscape, especially with regard to landscape and amenity designations included in Land Use Plans, resulting from development which is granted permission under the Strategy 	<ul style="list-style-type: none"> • Internal review of Strategy implementation 	<ul style="list-style-type: none"> • Where monitoring reveals developments permitted which result in avoidable adverse visual impacts on the landscape, the Authority will re-examine Strategy provisions and the effectiveness of their implementation
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 Strategy 	<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 Strategy 	<ul style="list-style-type: none"> • Internal review of Strategy implementation • Consultation with Department of Housing, Local Government and Heritage 	<ul style="list-style-type: none"> • Review internal systems • Find solutions in consultation with Department of Housing, Local Government and Heritage and planning authorities as relevant

Appendix I Relationship with Legislation and Other Plans and Programmes

This appendix is not intended to be a full and comprehensive review of EU Directives, the transposing regulations or the regulatory framework for environmental protection and management. The information is not exhaustive and it is recommended to consult the Directive, Regulation, Plan or Programme for full details of each.

Legislation, Plan, etc.	Summary of high-level aim/ purpose/ objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
International/European Level			
SEA Directive (2001/42/EC)	<ul style="list-style-type: none"> Contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development. Provide for a high level of protection of the environment by carrying out an environmental assessment of plans and programmes which are likely to have significant effects on the environment. 	<ul style="list-style-type: none"> Carry out an environmental assessment for plans or programmes referred to in Articles 2 to 4 of the Directive. Prepare an environmental report which identifies, describes and evaluates the likely significant effects on the environment of implementing the plan or programme and reasonable alternatives that consider the objectives and the geographical scope of the plan or programme. Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission. Consult other Member States where the implementation of a plan or programme is likely to have transboundary environmental effects. Inform relevant authorities and stakeholders on the decision to implement the plan or programme. Issue a statement to include requirements detailed in Article 9 of the Directive. Monitor and mitigate significant environmental effects identified by the assessment. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EIA Directive (2011/92/EU as amended by 2014/52/EU)	<ul style="list-style-type: none"> Requires the assessment of the environmental effects of public and private projects which are likely to have significant effects on the environment. Aims to assess and implement avoidance or mitigation measures to eliminate environmental effects, before consent is given of projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects. Those projects are defined in Article 4. 	<ul style="list-style-type: none"> All projects listed in Annex I are considered as having significant effects on the environment and require an EIA. For projects listed in Annex II, a “screening procedure” is required to determine the effects of projects on the basis of thresholds/criteria or a case by case examination. This should take into account Annex III. The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12, the direct and indirect effects of a project on the following factors: human beings, fauna and flora, soil, water, air, climate and the landscape, material assets and the cultural heritage, the interaction between each factor. Consult with relevant authorities, stakeholders and public allowing sufficient time to make a submission before a decision is made. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Habitats Directive (92/43/EEC)	<ul style="list-style-type: none"> Promote the preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora. Contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora. Maintain or restore to favourable conservation status, natural habitats and species of wild fauna and flora of community interest. Promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. 	<ul style="list-style-type: none"> Propose and protect sites of importance to habitats, plant and animal species. Establish a network of European sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, to enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range. Carry out comprehensive assessment of habitat types and species present. Establish a system of strict protection for the animal species and plant species listed in Annex IV. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Birds Directive (2009/147/EC)	<ul style="list-style-type: none"> Conserve all species of naturally occurring birds in the wild state including their eggs, nests and habitats. Protect, manage and control these species and comply with regulations relating to their exploitation. The species included in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution. 	<ul style="list-style-type: none"> Preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex 1. Preserve, maintain and establish biotopes and habitats to include the creation of protected areas (Special Protection Areas). Ensure the upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones, re-establish destroyed biotopes and creation of biotopes. Measures for regularly occurring migratory species not listed in Annex I is required as regards their breeding, moulting and wintering areas and staging posts along their migration routes. The protection of wetlands and particularly wetlands of international importance. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EU Nitrates Directive (91/676/EC)	<ul style="list-style-type: none"> Reducing water pollution caused or induced by nitrates from agricultural sources and – preventing further such pollution. 	<p>Ireland's Nitrates Action Programme is designed to prevent pollution of surface waters and ground water from agricultural sources and to protect and improve water quality. Ireland's third NAP came into operation in 2014. Each Member State's NAP must include:</p> <ul style="list-style-type: none"> a limit on the amount of livestock manure applied to the land each year set periods when land spreading is prohibited due to risk set capacity levels for the storage of livestock manure 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Legislation, Plan, etc.	Summary of high-level aim/ purpose/ objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
EU Integrated Pollution Prevention Control Directive (2008/1/EC)	<ul style="list-style-type: none"> The purpose of this Directive is to achieve integrated prevention and control of pollution arising from the activities listed in Annex I. It lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land from the abovementioned activities, including measures concerning waste, in order to achieve a high level of protection of the environment taken as a whole, without prejudice to Directive 85/337/EEC and other relevant Community provisions. 	<p>The IPPC Directive is based on several principles:</p> <ul style="list-style-type: none"> an integrated approach best available techniques, flexibility; and public participation 	<p>framework for environmental protection and management.</p> <p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
EU Plant Protection (products) Directive 2009/127/EC	<ul style="list-style-type: none"> The Directive aims at reducing the risks and impacts of pesticide use on human health and the environment by introducing different targets, tools and measures such as Integrated Pest Management (IPM) or National Action Plans (NAPs). 	<ul style="list-style-type: none"> The Framework Directive applies to pesticides which are plant protection products. Regarding pesticide application equipment already in professional use, the Framework Directive introduces requirements for the inspection and maintenance to be carried out on such equipment. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
EU Renewables Directive (2009/28/EC)	<ul style="list-style-type: none"> The Renewable Energy Directive establishes an overall policy for the production and promotion of energy from renewable sources in the EU. It requires the EU to fulfil at least 20% of its total energy needs with renewables by 2020 – to be achieved through the attainment of individual national targets. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2020. 	<ul style="list-style-type: none"> The Directive promotes cooperation amongst EU countries (and with countries outside the EU) to help them meet their renewable energy targets. The Directive specifies national renewable energy targets for each country, taking into account its starting point and overall potential for renewables. EU countries set out how they plan to meet these targets and the general course of their renewable energy policy in national renewable energy action plans. Progress towards national targets is measured every two years when EU countries publish national renewable energy progress reports. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Indirect Land Use Change Directive (2012/0288 (COD))	<ul style="list-style-type: none"> Article 3(4) of Directive 2009/28/EC of the European Parliament and of the Council (3) requires Member States to ensure that the share of energy from renewable energy sources in all forms of transport in 2020 is at least 10 % of their final energy consumption. The blending of biofuels is one of the methods available for Member States to meet this target, and is expected to be the main contributor. Other methods available to meet the target are the reduction of energy consumption, which is imperative because a mandatory percentage target for energy from renewable sources is likely to become increasingly difficult to achieve sustainably if overall demand for energy for transport continues to rise, and the use of electricity from renewable energy sources. 	<ul style="list-style-type: none"> Limit the contribution that conventional biofuels (with a risk of ILUC emissions) make towards attainment of the targets in the Renewable Energy Directive; Improve the greenhouse gas performance of biofuel production processes (reducing associated emissions) by raising the greenhouse gas saving threshold for new installations subject to protecting installations already in operation on 1st July 2014; Encourage a greater market penetration of advanced (low-ILUC) biofuels by allowing such fuels to contribute more to the targets in the Renewable Energy Directive than conventional biofuels; Improve the reporting of greenhouse gas emissions by obliging Member States and fuel suppliers to report the estimated indirect land-use change emissions of biofuels. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Alternative Fuels Infrastructure Directive (2014/94/EU)	<ul style="list-style-type: none"> This Directive establishes a common framework of measures for the deployment of alternative fuels infrastructure in the Union in order to minimise dependence on oil and to mitigate the environmental impact of transport. 	<ul style="list-style-type: none"> This Directive sets out minimum requirements for the building-up of alternative fuels infrastructure, including recharging points for electric vehicles and refuelling points for natural gas (LNG and CNG) and hydrogen, to be implemented by means of Member States' national policy frameworks, as well as common technical specifications for such recharging and refuelling points, and user information requirements. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
EU Energy Efficiency Directive (2012/27/EU)	<ul style="list-style-type: none"> Establishes a set of binding measures to help the EU reach its 20% energy efficiency target by 2020. Under the Directive, all EU countries are required to use energy more efficiently at all stages of the energy chain, from production to final consumption. 	<ul style="list-style-type: none"> Energy distributors or retail energy sales companies have to achieve 1.5% energy savings per year through the implementation of energy efficiency measures EU countries can opt to achieve the same level of savings through other means, such as improving the efficiency of heating systems, installing double glazed windows or insulating roofs The public sector in EU countries should purchase energy efficient buildings, products and services Every year, governments in EU countries must carry out energy efficient renovations on at least 3% (by floor area) of the buildings they own and occupy 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory</p>

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Legislation, Plan, etc.	Summary of high-level aim/ purpose/ objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
		<ul style="list-style-type: none"> Energy consumers should be empowered to better manage consumption. This includes easy and free access to data on consumption through individual metering National incentives for SMEs to undergo energy audits Large companies will make audits of their energy consumption to help them identify ways to reduce it Monitoring efficiency levels in new energy generation capacities. 	framework for environmental protection and management.
EU Seveso Directive (2012/18/EU)	<ul style="list-style-type: none"> This Directive lays down rules for the prevention of major accidents which involve dangerous substances, and the limitation of their consequences for human health and the environment, with a view to ensuring a high level of protection throughout the Union in a consistent and effective manner. 	<p>The Seveso Directive is well integrated with other EU policies, thus avoiding double regulation or other administrative burden. This includes the following related policy areas:</p> <ul style="list-style-type: none"> Classification, labelling and packaging of chemicals; The Union's Civil Protection Mechanism; The Security Union Agenda including CBRN-E and Protection of critical infrastructure; Policy on environmental liability and on the protection of the environment through criminal law; Safety of offshore oil and gas operations. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Union Biodiversity Strategy to 2020	<ul style="list-style-type: none"> Aims to halt or reverse biodiversity loss and speed up the EU's transition towards a resource efficient and green economy. Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible. 	<ul style="list-style-type: none"> Outlines six targets and twenty actions to aid European Union in halting the loss to biodiversity and eco-system services. The six targets cover: <ul style="list-style-type: none"> Full implementation of EU nature legislation to protect biodiversity Maintaining, enhancing and protecting for ecosystems, and green infrastructure Ensuring sustainable agriculture, and forestry Sustainable management of fish stocks Reducing invasive alien species Addressing the global need to contribute towards averting global biodiversity loss 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EU Green Infrastructure Strategy	Aims to create a robust enabling framework in order to promote and facilitate Green Infrastructure (GI) projects.	<ul style="list-style-type: none"> Promoting GI in the main EU policy areas. Supporting EU-level GI projects. Improving access to finance for GI projects. Improving information and promoting innovation. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
UNESCO (1972) The Convention for the Protection of the World Cultural and Natural Heritage	<ul style="list-style-type: none"> links concepts of nature conservation and the preservation of cultural properties; and recognizes the way in which people interact with nature, and the fundamental need to preserve the balance between the two. 	<ul style="list-style-type: none"> sets out the duties of States Parties in identifying potential sites and their role in protecting and preserving them; each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage; encourages to integrate the protection of the cultural and natural heritage into regional planning programmes, set up staff and services at their sites, undertake scientific and technical conservation research and adopt measures which give this heritage a function in the day-to-day life of the community. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
UN (1992) The Convention on Biological Diversity	An overall objective is to develop national strategies for the conservation and sustainable use of biological diversity.	<p>The Convention has three main goals:</p> <ul style="list-style-type: none"> the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
UN (1992) Framework Convention on Climate Change	It is aimed at stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.	The Convention acknowledges the vulnerability of all countries to the effects of climate change and calls for special efforts to ease the consequences, especially in developing countries which lack the resources to do so on their own.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and

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Legislation, Plan, etc.	Summary of high-level aim/ purpose/ objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
UN Kyoto Protocol (2nd Kyoto Period), the Second European Climate Change Programme (ECCP II), Paris climate conference (COP21) 2015 (Paris Agreement)	<p>The UN Kyoto Protocol set of policy measures to reduce greenhouse gas emissions.</p> <p>The Second European Climate Change Programme (ECCP II) aims to identify and develop all the necessary elements of an EU strategy to implement the Kyoto Protocol.</p> <p>At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.</p>	<ul style="list-style-type: none"> The Kyoto Protocol is implemented through the European Climate Change Programme (ECCP II). EU member states implement measures to improve on or complement the specified measures and policies arising from the ECCP. Under COP21, governments agreed to come together every 5 years to set more ambitious targets as required by science; report to each other and the public on how well they are doing to implement their targets; track progress towards the long-term goal through a robust transparency and accountability system. 	<p>cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p> <p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
EU 2020 Climate and Energy Package	<ul style="list-style-type: none"> Binding legislation which aims to ensure the European Union meets its climate and energy targets for 2020. Aims to achieve a 20% reduction in EU greenhouse gas emissions from 1990 levels. Aims to raise the share of EU energy consumption produced from renewable resources to 20%. Achieve a 20% improvement in the EU's energy efficiency. 	<p>Four pieces of complimentary legislation:</p> <ul style="list-style-type: none"> Reform of the EU Emissions Trading System (EU ETS) to include a cap on emission allowances in addition to existing system of national caps. Member States have agreed national targets for non-EU ETS emissions from countries outside the EU. Meet the national renewable energy targets of 16% for Ireland by 2020. Preparing a legal framework for technologies in carbon capture and storage. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
EU 2030 Framework for Climate and Energy	<ul style="list-style-type: none"> A 2030 Framework for climate and energy, including EU-wide targets and policy objectives for the period between 2020 and 2030 that has been agreed by European countries. Targets include a 40% cut in greenhouse gas emissions compared to 1990 levels, at least a 27% share of renewable energy consumption and at least 27% energy savings compared with the business-as-usual scenario. 	<p>To meet the targets, the European Commission has proposed the following policies for 2030:</p> <ul style="list-style-type: none"> A reformed EU emissions trading scheme (ETS). New indicators for the competitiveness and security of the energy system, such as price differences with major trading partners, diversification of supply, and interconnection capacity between EU countries. First ideas for a new governance system based on national plans for competitive, secure, and sustainable energy. These plans will follow a common EU approach. They will ensure stronger investor certainty, greater transparency, enhanced policy coherence and improved coordination across the EU. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
The Clean Air for Europe Directive (2008/50/EC) (EU Air Framework Directive) Fourth Daughter Directive (2004/107/EC)	<ul style="list-style-type: none"> The CAFE Directive merges existing legislation into a single directive (except for the fourth daughter directive). Sets new air quality objectives for PM_{2.5} (fine particles) including the limit value and exposure related objectives. Accounts for the possibility to discount natural sources of pollution when assessing compliance against limit values. Allows the possibility for time extensions of three years (PM₁₀) or up to five years (NO₂, benzene) for complying with limit values, based on conditions and the assessment by the European Commission. The Fourth Daughter Directive lists pollutants, target values and monitoring requirements for the following: arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air. 	<ul style="list-style-type: none"> Sets objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole. Aims to assess the ambient air quality in Member States on the basis of common methods and criteria. Obtains information on ambient air quality in order to help combat air pollution and nuisance and to monitor long-term trends and improvements resulting from national and community measures. Ensures that such information on ambient air quality is made available to the public. Aims to maintain air quality where it is good and improving it in other cases. Aims to promote increased cooperation between the Member States in reducing air pollution. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Noise Directive (2002/49/EC)	<p>The Noise Directive - Directive 2002/49/EC relating to the assessment and management of environmental noise - is part of an EU strategy setting out to reduce the number of people affected by noise in the longer term and to provide a framework for developing existing Community policy on noise reduction from source.</p>	<p>The Directive requires competent authorities in Member States to:</p> <ul style="list-style-type: none"> Draw up strategic noise maps for major roads, railways, airports and agglomerations, using harmonised noise indicators and use these maps to assess the number of people which may be impacted upon as a result of excessive noise levels; Draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good; and Inform and consult the public about noise exposure, its effects, and the measures considered to address noise. <p>The Directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities.</p>	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Floods Directive (2007/60/EC)	<ul style="list-style-type: none"> Establishes a framework for the assessment and management of flood risks Reduce adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the 	<ul style="list-style-type: none"> Assess all water courses and coast lines at risk from flooding through Flood Risk Assessment Prepare flood hazard maps and flood risk maps outlining the extent or potential of flooding and assets and humans at risk in these areas at River Basin District level 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise.</p>

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	Community	<p>(Article 3(2) (b)) and areas covered by Article 5(1) and Article 13(1) (b) in accordance with paragraphs 2 and 3.</p> <ul style="list-style-type: none"> Implement flood risk management plans and take adequate and coordinated measures to reduce flood risk for the areas covered by the Articles listed above. Inform the public and allow the public to participate in planning process. 	Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Water Framework Directive (2000/60/EC)	<ul style="list-style-type: none"> Establish a framework for the protection of water bodies to include inland surface waters, transitional waters, coastal waters and groundwater and their dependent wildlife and habitats. Preserve and prevent the deterioration of water status and where necessary improve and maintain “good status” of water bodies. Promote sustainable water usage. The Water Framework Directive repealed the following Directives: <ul style="list-style-type: none"> The Drinking Water Abstraction Directive Sampling Drinking Water Directive Exchange of Information on Quality of Surface Freshwater Directive Shellfish Directive Freshwater Fish Directive Groundwater (Dangerous Substances) Directive Dangerous Substances Directive 	<ul style="list-style-type: none"> Protect, enhance and restore all water bodies and meet the environmental objectives outlined in Article 4 of the Directive. Achieve “good status” for all waters. Manage water bodies based on identifying and establishing river basins districts. Involve the public and streamline legislation. Prepare and implement a River Basin Management Plan for each river basin districts identified and a Register of Protected Areas. Establish a programme of monitoring for surface water status, groundwater status and protected areas. Recover costs for water services. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Groundwater Directive (2006/118/EC)	<ul style="list-style-type: none"> Protect, control and conserve groundwater. Prevent the deterioration of the status of all bodies of groundwater. Implements measures to prevent and control groundwater pollution, including criteria for assessing good groundwater chemical status and criteria for the identification of significant and sustained upward trends and for the definition of starting points for trend reversals. 	<ul style="list-style-type: none"> Meet minimum groundwater standards listed in Annex 1 of Directive. Meet threshold values adopted by national legislation for the pollutants, groups of pollutants and indicators of pollution which have been identified as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk, also taking into account Part B of Annex II. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Drinking Water Directive (98/83/EC)	<ul style="list-style-type: none"> Improve and maintain the quality of water intended for human consumption. Protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean. 	<ul style="list-style-type: none"> Set values applicable to water intended for human consumption for the parameters set out in Annex I. Set values for additional parameters not included in Annex I, where the protection of human health within national territory or part of it so requires. The values set should, as a minimum, satisfy the requirements of Article 4(1) (a). Implement all measures necessary to ensure that regular monitoring of the quality of water intended for human consumption is carried out, in order to check that the water available to consumers meets the requirements of this Directive and in particular the parametric values set in accordance with Article 5. Ensure that any failure to meet the parametric values set in accordance with Article 5 is immediately investigated in order to identify the cause. Ensure that the necessary remedial action is taken as soon as possible to restore its quality and shall give priority to their enforcement action. Undertake remedial action to restore the quality of the water where necessary to protect human health. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Urban Waste Water Treatment Directive (91/271/EEC)	<ul style="list-style-type: none"> This Directive concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors. The objective of the Directive is to protect the environment from the adverse effects of waste water discharges. 	<ul style="list-style-type: none"> Urban waste water entering collecting systems shall before discharge, be subject to secondary treatment. Annex II requires the designation of areas sensitive to eutrophication which receive water discharges. Establishes minimum requirements for urban waste water collection and treatment systems in specified agglomerations to include special requirements for sensitive areas and certain industrial sectors. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Environmental Liability Directive (2004/35/EC) as amended by Directive 2006/21/EC, Directive 2009/31/EC and Directive 2013/30/EU	<ul style="list-style-type: none"> Establish a framework of environmental liability based on the ‘polluter-pays’ principle, to prevent and remedy environmental damage. 	<ul style="list-style-type: none"> Relates to environmental damage caused by any of the occupational activities listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities; damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent. Where environmental damage has not yet occurred but there is an imminent threat of such damage occurring, the operator shall, without delay, take the necessary 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the

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		<p>preventive measures.</p> <ul style="list-style-type: none"> Where environmental damage has occurred the operator shall, without delay, inform the competent authority of all relevant aspects of the situation and take all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and the necessary remedial measures, in accordance with Article 7. The operator shall bear the costs for the preventive and remedial actions taken pursuant to this Directive. The competent authority shall be entitled to initiate cost recovery proceedings against the operator. The operator may be required to provide financial security guarantees to ensure their responsibilities under the directive are met. The Environmental Liability Directive has been amended through a number of Directives. Implementation of the Environmental Liability Directive is contributed towards by a Multi-Annual Work Programme (MAWP) 'Making the Environmental Liability Directive more fit for purpose' that is updated annually to changing developments, growing knowledge and new needs. 	achievement of the objectives of the regulatory framework for environmental protection and management.
European Convention on the Protection of the Archaeological Heritage (Valletta 1992)	<ul style="list-style-type: none"> The aim of this (revised) Convention is to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study. 	The Valletta Convention makes the conservation and enhancement of the archaeological heritage one of the goals of urban and regional planning policies. The Convention sets guidelines for the funding of excavation and research work and publication of research findings. It also deals with public access, in particular to archaeological sites, and educational actions to be undertaken to develop public awareness of the value of the archaeological heritage. It also constitutes an institutional framework for pan-European co-operation on the archaeological heritage, entailing a systematic exchange of experience and experts among the various States.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Convention of the Protection of the Architectural Heritage of Europe (Granada 1995)	<ul style="list-style-type: none"> The main purpose of the Convention is to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties. It establishes the principles of "European co-ordination of conservation policies" including consultations regarding the thrust of the policies to be implemented. 	<ul style="list-style-type: none"> The reinforcement and promotion of policies for protecting and enhancing the heritage within the territories of the parties. The affirmation of European solidarity with regard to the protection of the heritage and the fostering of practical co-operation between states and regions. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
ICOMOS (2011) Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes ('Dublin Principles')	<ul style="list-style-type: none"> It is aimed to assist in the documentation, protection, conservation and appreciation of industrial heritage as part of the heritage of human societies around the World. 	<ul style="list-style-type: none"> (I) Document and understand industrial heritage structures, sites, areas and landscapes and their values; (II) Ensure effective protection and conservation of the industrial heritage structures, sites, areas and landscapes; (III) Conserve and maintain the industrial heritage structures, sites, areas and landscapes; and (IV) Present and communicate the heritage dimensions and values of industrial structures, sites, areas and landscapes to raise public and corporate awareness, and support training and research. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro 2005)	<ul style="list-style-type: none"> Cultural heritage is a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time. A heritage community consists of people who value specific aspects of cultural heritage which they wish, within the framework of public action, to sustain and transmit to future generations. 	<ul style="list-style-type: none"> Recognise that rights relating to cultural heritage are inherent in the right to participate in cultural life, as defined in the Universal Declaration of Human Rights. Recognise individual and collective responsibility towards cultural heritage. Emphasise that the conservation of cultural heritage and its sustainable use have human development and quality of life as their goal. Take the necessary steps to apply the provisions of this Convention concerning the role of cultural heritage in the construction of a peaceful and democratic society. Greater synergy of competencies among all the public, institutional and private actors concerned. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Landscape Convention 2000	<ul style="list-style-type: none"> The developments in agriculture, forestry, industrial and mineral production techniques, together with the practices followed in town and country planning, transport, networks, tourism and recreation, and at a more general level, changes in the world economy, have in many cases 	<ul style="list-style-type: none"> Promote protection, management and planning of landscapes. Organise European co-operation on landscape issues. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise.

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	accelerated the transformation of landscapes. The Convention expresses a concern to achieve sustainable development based on a balanced and harmonious relationship between social needs, economic activity and the environment. It aims to respond to the public's wish to enjoy high quality landscapes.		Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
The Seventh Environmental Action Programme (EAP) of the European Community (2013-2020)	It identifies three key objectives: <ul style="list-style-type: none"> to protect, conserve and enhance the Union's natural capital to turn the Union into a resource-efficient, green, and competitive low-carbon economy to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing 	Four so called "enablers" will help Europe deliver on these objectives (goals): <ul style="list-style-type: none"> Better implementation of legislation. Better information by improving the knowledge base. More and wiser investment for environment and climate policy. Full integration of environmental requirements and considerations into other policies. Two additional horizontal priority objectives complete the programme: <ul style="list-style-type: none"> To make the Union's cities more sustainable. To help the Union address international environmental and climate challenges more effectively. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats)	The convention has three main aims: <ul style="list-style-type: none"> to conserve wild flora and fauna and their natural habitats to promote cooperation between states to give particular attention to endangered and vulnerable species including endangered and vulnerable migratory species 	The Parties under the convention recognise the intrinsic value of nature, which needs to be preserved and passed to future generations, they also: <ul style="list-style-type: none"> Seek to ensure the conservation of nature in their countries, paying particular attention to planning and development policies and pollution control. Look at implementing the Bern Convention in central Eastern Europe and the Caucas. Take account of the potential impact on natural heritage by other policies. Promote education and information of the public, ensuring the need to conserve species is understood and acted upon. Develop an extensive number of species action plans, codes of conducts, and guidelines, at their own initiative or in co-operation with other organisations. Created the Emerald Network, an ecological network made up of Areas of Special Conservation Interest. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Bali Road Map (2007)	The overall goals of the project are twofold: <ul style="list-style-type: none"> To increase national capacity to co-ordinate ministerial views, participate in the UNFCCC process, and negotiate positions within the timeframe of the Bali Action Plan; and To assess investment and financial flows to address climate change for up to three key sectors and/or economic activities. 	The Bali Action Plan is centred on four main building Blocks: <ul style="list-style-type: none"> mitigation adaptation technology financing 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Cancun Agreements (2010)	Set of decisions taken at the COP 16 Conference in Cancun in 2010 which addresses a series of key issues in the fight against climate change. Cancun Agreements' main objectives cover: <ul style="list-style-type: none"> Mitigation Transparency of actions Technology Finance Adaptation Forests Capacity building 	Among the most prominent agreements is the establishment of a Green Climate Fund to transfer money from the developed to developing world to tackle the impacts of climate change.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Doha Climate Gateway (2012)	Set of decisions taken at the COP 18 meeting in Doha in 2012 which pave the way for a new agreement in Paris in 2015.	<ul style="list-style-type: none"> Set out a timetable to adopt a universal climate agreement by 2015 (to come into effect in 2020); Complete the work under Bali Action Plan and to focus on new completing new targets; Strengthen the aim to cut greenhouse gases and help vulnerable countries to adapt; Amend Kyoto Protocol to include a new commitment period for cutting down the greenhouse gases emissions; and Provide the financial and technology support and new institutions to allow clean energy investment and sustainable growth in developing countries. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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EU Common Agricultural Policy	<ul style="list-style-type: none"> To improve agricultural productivity, so that consumers have a stable supply of affordable food; and To ensure that EU farmers can make a reasonable living. 	<ul style="list-style-type: none"> ensuring viable food production that will contribute to feeding the world's population, which is expected to rise considerably in the future; Climate change and sustainable management of natural resources; Looking after the countryside across the EU and keeping the rural economy alive. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EU REACH Regulation (EC 1907/2006)	<ul style="list-style-type: none"> Aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. 	<p>The aims are achieved by applying REACH, namely:</p> <ul style="list-style-type: none"> Registration, Evaluation, Authorisation; and Restriction of chemicals. <p>REACH also aims to enhance innovation and competitiveness of the EU chemicals industry.</p>	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Stockholm Convention	<ul style="list-style-type: none"> The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants. 	<ul style="list-style-type: none"> Prohibit and/or eliminate the production and use, as well as the import and export, of the intentionally produced Persistent Organic Pollutants (POPs) that are listed in Annex A to the Convention Restrict the production and use, as well as the import and export, of the intentionally produced POPs that are listed in Annex B to the Convention Reduce or eliminate releases from unintentionally produced POPs that are listed in Annex C to the Convention Ensure that stockpiles and wastes consisting of, containing or contaminated with POPs are managed safely and in an environmentally sound manner To target additional POPs Other provisions of the Convention relate to the development of implementation plans, information exchange, public information, awareness and education, research, development and monitoring, technical assistance, financial resources and mechanisms, reporting, effectiveness evaluation and non-compliance 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Ramsar Convention	The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".	<p>Under the "three pillars" of the Convention, the Contracting Parties commit to:</p> <ul style="list-style-type: none"> Work towards the wise use of all their wetlands; Designate suitable wetlands for the list of Wetlands of International Importance (the "Ramsar List") and ensure their effective management; Cooperate internationally on transboundary wetlands, shared wetland systems and shared species. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European 2020 Strategy for Growth	<p>Europe 2020 sets out a vision of Europe's social market economy for the 21st century and puts forward three mutually reinforcing priorities:</p> <ul style="list-style-type: none"> Smart growth: developing an economy based on knowledge and innovation; Sustainable growth: promoting a more resource efficient, greener and more competitive economy; Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion. 	<p>In order to reach these priorities, the Commission proposes five quantitative targets to fulfil by 2020:</p> <ol style="list-style-type: none"> 75 % of the population aged 20-64 should be employed; 3% of the EU's GDP should be invested in R&D; the "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right); the share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree; 20 million less people should be at risk of poverty. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Parliament resolutions, including: The European Green Deal (EGD) 2020	The deal sets out how to make Europe the first climate-neutral continent by 2050, boosting the economy, improving people's quality of life, caring for nature and leaving no one behind.	<ul style="list-style-type: none"> It sets out a roadmap with actions to boost the efficient use of resources by moving to a clean, circular economy, restore biodiversity and cut pollution. It outlines investments required, financing tools available and explains how to ensure a just and inclusive transition. In order to meet the goal to become climate neutral by 2050 as part of the European Green Deal, the European Union (EU) Commission proposed on 4th March 2020 to bring about the first European Climate Law and legally bind the target of net zero greenhouse gas emissions by 2050. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory

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Legislation, Plan, etc.	Summary of high-level aim/ purpose/ objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
EU (2020) Biodiversity Strategy	A long-term plan for protecting nature and reversing the degradation of ecosystems across the European Union.	The Strategy contains specific commitments and actions to be delivered by 2030, including: <ul style="list-style-type: none"> Establishing a larger EU-wide network of protected areas on land and at sea, building upon existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value. An EU Nature Restoration Plan - a series of concrete commitments and actions to restore degraded ecosystems across the EU by 2030, and manage them sustainably, addressing the key drivers of biodiversity loss. A set of measures to enable the necessary transformative change: setting in motion a new, strengthened governance framework to ensure better implementation and track progress, improving knowledge, financing and investments and better respecting nature in public and business decision-making. Measures to tackle the global biodiversity challenge, demonstrating that the EU is ready to lead by example towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity. 	framework for environmental protection and management. Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EU (2018) Clean Air Policy Package	Aims to substantially reduce air pollution across the EU.	The proposed strategy sets out objectives for reducing the health and environmental impacts of air pollution by 2030, and contains legislative proposals to implement stricter standards for emissions and air pollution.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Leaders Pledge for Nature 2020	Political leaders (including Taoiseach Michael Martin) participating in the United Nations Summit on Biodiversity in September 2020, representing 75 countries from all regions and the European Union, have committed to reversing biodiversity loss by 2030.	As part of the UN Decade of Action to achieve sustainable development, the leaders commit to achieve the vision of Living in Harmony with Nature by 2050 by undertaking ten actions, including: <ul style="list-style-type: none"> Putting biodiversity, climate, and the environment at the heart of COVID-19 recovery strategies and investments as well as national and international development and cooperation; Developing and implementing an ambitious and transformational post-2020 global biodiversity framework for adoption at the 15th meeting of the Conference of the Parties (COP 15) to the UN Convention on Biological Diversity (CBD) in Kunming, China, as a key instrument to reach the SDGs; Raising ambition and aligning domestic climate policies with the Paris Agreement on climate change, with enhanced nationally determined contributions (NDCs) and long-term strategies consistent with the temperature goals of the Paris Agreement, and the objective of net zero greenhouse gas (GHG) emissions by mid-century, and strengthen climate resilience of economies and ecosystems; and Mainstream biodiversity into relevant sectoral and cross-sectoral policies at all levels, including in food production, agriculture, fisheries and forestry, energy, tourism, infrastructure and extractive industries, and trade and supply chains, as well as into key international agreements and processes. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Level			
The National Sustainable Mobility Policy 2022	The National Sustainable Mobility Policy was published by the government in April 2022 and supersedes the National Cycle Policy and Smarter Travel. The National Sustainable Mobility Policy sets out a strategic framework to 2030 for walking, cycling and public transport to help Ireland meet its climate obligations. The policy aims to deliver at least 500,000 additional daily active travel and public transport journeys by 2030 and a 10% reduction in the number of kilometres driven by fossil fuelled cars. It will make it easier for people to choose walking, cycling and use public transport daily instead of having to use a petrol or diesel car.	Key actions that are relevant to WMATS include: <ul style="list-style-type: none"> Expanding bus capacity and services through the BusConnects programme in Waterford; Use of zero emission bus fleet for Waterford by 2030; Reallocation of Plunkett Train Station to a new location on the North Quays as part of a wider urban regeneration project; and Development of a “10-minute Cities” initiative, promoting the ability for individuals to access all essential services within a 10-minute walk / cycle or public transport connection from people’s homes. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Investment Framework for Transport in Ireland	The high-level strategic framework for prioritising future investment in the land transport network. This new framework is the Department of Transport’s contribution to Project Ireland 2040, Government’s long-term strategy for accommodating population growth in a sustainable manner and making Ireland a better country for all of its people. It has been developed to ensure that our transport sectoral strategy is underpinned by and supports the achievement of the spatial objectives and National Strategic Objectives set out in the National Planning Framework.	The framework establishes high-level investment priorities to efficiently and effectively address key transport challenges identified by the background analysis and to ensure that transport investment is aligned with and supports Government’s overarching spatial and climate change objectives, as articulated in the National Planning Framework and Climate Action Plan.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the

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			achievement of the objectives of the regulatory framework for environmental protection and management.
Investing in our Future: A Strategic Framework for Investment in Land Transport (SFILT) – Department of Transport, Tourism and Sport	<ul style="list-style-type: none"> SFILT sets out a set of priorities to guide the allocation of the State's investment to best develop and manage Ireland's land transport network over the coming decades. 	<p>The three priorities stated in SFILT are:</p> <ul style="list-style-type: none"> Priority 1: Achieve steady state maintenance (meaning that the maintenance and renewal of the existing transport system is at a sufficient level to maintain the system in an adequate condition); Priority 2: Address urban congestion; and Priority 3: Maximise the value of the road network. <p>In delivering on the steady state maintenance objective set out in SFILT, the Plan includes for:</p> <ul style="list-style-type: none"> Planned replacement programme for the bus fleet operated under Public Service Obligation ("PSO") contracts; Tram refurbishment and asset renewal in the case of light rail; and To the extent within the Authority's remit, support for the operation of the existing rail network within the GDA. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Cycle Network Scoping Study 2010	<ul style="list-style-type: none"> Outlines objectives and actions aimed at developing a strong cycle network in Ireland Sets out 19 specific objectives, and details the 109 actions, aimed at ensuring that a cycling culture is developed 	<ul style="list-style-type: none"> Sets a target where 10% of all journeys will be made by bike by 2020 <p>Proposes the planning, infrastructure, communication, education and stakeholder participations measures required to implement the initiative</p>	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Cycle Policy Framework 2009-2020	The overarching mission of Ireland's first National Cycle Policy Framework 2009-2020 is to create a strong national cycling culture where cycling is considered the norm. Its vision is that all cities, towns, villages and rural areas will be bicycle friendly to achieve the objective that 10% all trips will be by bike by 2020.	<p>The key objectives of this Framework are to:</p> <ul style="list-style-type: none"> Support the planning, development and design of towns and cities in a cycling and pedestrian friendly way; Ensure that the urban road infrastructure (except for motorways) is designed / retrofitted to be cyclist-friendly; Provide cycling-friendly routes to all schools, adequate cycling parking facilities within schools, and cycling training to all school pupils; Ensure proper integration between cycling and public transport; Provide secure parking for bikes; and Improve the image of cycling and promote cycling using "soft interventions" such as promotional campaigns and events. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Policy Framework for Alternative Fuels Infrastructure for Transport in Ireland 2017 to 2030	<ul style="list-style-type: none"> This National Policy Framework on Alternative Fuels Infrastructure for Transport represents the first step in communicating our longer-term national vision for decarbonising transport by 2050, the cornerstone of which is our ambition that by 2030 all new cars and vans sold in Ireland will be zero-emissions capable. By 2030 it is envisaged that the movement in Ireland to electrically-fuelled cars and commuter rail will be well underway, with natural gas and biofuels developing as major alternatives in the freight and bus sectors. 	<p>Targets for alternative fuel infrastructure include the following:</p> <ul style="list-style-type: none"> AFV forecasts Electricity targets Natural gas (CNG, LNG) targets Hydrogen targets Biofuels targets LPG targets Synthetic and paraffinic fuels targets 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Ireland 2040 - Our Plan, the National Planning Framework and the National Development Plan (2021-2030)	<ul style="list-style-type: none"> The National Planning Framework is the Government's high-level strategic plan for shaping the future growth and development of to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for people, and to protect and enhance the environment - from villages to cities, and everything around and in between. The National Development Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework. This will guide national, regional and local planning and investment decisions in Ireland over the next two decades, to cater for an expected population increase of over 1 million people. 	<p>National Strategic Outcomes as follows:</p> <ol style="list-style-type: none"> Compact Growth Enhanced Regional Accessibility Strengthened Rural Economies and Communities Sustainable Mobility A Strong Economy, supported by Enterprise, Innovation and Skills High-Quality International Connectivity Enhanced Amenity and Heritage Transition to a Low-Carbon and Climate-Resilient Society Sustainable Management of Water and other Environmental Resources Access to Quality Childcare, Education and Health Services 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Planning, Land Use and Transport Outlook 2040	The PLUTO takes account of forecasted future economic and demographic scenarios, affordability considerations and relevant Government policies	<p>The PLUTO seeks to:</p> <ol style="list-style-type: none"> Quantify in broad terms the appropriate scale of financial investment in land transport over the long term; Consider how fiscal, environmental and technological developments might impact on this investment; and, 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with

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		3. Identify strategic priorities for future investment to ensure land transport infrastructure provision facilitates the objectives of Project Ireland 2040.	all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Planning and Development Act 2000 (as amended)	<ul style="list-style-type: none"> The core principal objectives of this Act are to amend the Planning Acts of 2000 – 2009 with specific regard given to supporting economic renewal and sustainable development. 	<ul style="list-style-type: none"> Development, with certain exceptions, is subject to development control under the Planning Acts and the local authorities grant or refuse planning permission for development, including ones within protected areas. There are, however, a range of exemptions from the planning system. Use of land for agriculture, peat extraction and afforestation, subject to certain thresholds, is generally exempt from the requirement to obtain planning permission. Additionally, Environmental Impact Assessment (EIA) is required for a range of classes and large-scale projects. Under planning legislation, Development Plans must include mandatory objectives for the conservation of the natural heritage and for the conservation of European sites and any other sites which may be prescribed. There are also discretionary powers to set objectives for the conservation of a variety of other elements of the natural heritage. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004), as amended by S.I. 200 of 2011	<ul style="list-style-type: none"> The purpose of these Regulations is to transpose into Irish law Directive 2001/42/EC of 27 June 2001 (O.J. No. L 197, 21 July 2001) on the assessment of the effects of certain plans and programmes on the environment – commonly known as the Strategic Environmental Assessment (SEA) Directive. 	<ul style="list-style-type: none"> The Regulations cover plans and programmes in all of the sectors listed in article 3(2) of the Directive except land-use planning. These Regulations also amend certain provisions of the Planning and Development Act 2000 to provide the statutory basis for the transposition of the Directive in respect of land-use planning. Transposition in respect of the land-use planning sector is contained in the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004). 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011, as amended)	<ul style="list-style-type: none"> These Regulations provide a new for the implementation in Ireland of Council Directive 92/43/EEC on habitats and protection of wild fauna and flora (as amended) and for the implementation of Directive 2009/147/EC of the European Parliament and of the Council on the protection of wild birds. 	<ul style="list-style-type: none"> They provide, among other things, for: the appointment and functions of authorized officers; identification, classification and other procedures relative to the designation of Community sites. The Regulations have been prepared to address several judgments of the CJEU against Ireland, notably cases C-418/04 and C-183/05, in respect of failure to transpose elements of the Birds Directive and the Habitats Directive into Irish law. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Waste Management Act 1996, as amended	<ul style="list-style-type: none"> To make provision in relation to the prevention, management and control of waste; to give effect to provisions of certain acts adopted by institutions of the European communities in respect of those matters; to amend the Environmental Protection Agency Act, 1992, and to repeal certain enactments and to provide for related matters. 	<ul style="list-style-type: none"> The Waste Management Act contains a number of key legal obligations, including requirements for waste management planning, waste collection and movement, the authorisation of waste facilities, measures to reduce the production of waste and/or promote its recovery. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities Environmental Objectives (FPM) Regulations 2009 (S.I. 296 of 2009)	<ul style="list-style-type: none"> The purpose of these Regulations is to support the achievement of favourable conservation status for freshwater pearl mussels 	<ul style="list-style-type: none"> Set environmental quality objectives for the habitats of the freshwater pearl mussel populations named in the First Schedule to these Regulations that are within the boundaries of a site notified in a candidate list of European sites, or designated as a Special Area of Conservation, under the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94/1997). Require the production of sub-basin management plans with programmes of measures to achieve these objectives. Set out the duties of public authorities in respect of the sub-basin management plans and programmes of measure. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. 9 of 2010), as amended (S.I.	<ul style="list-style-type: none"> To amend the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010) to make further provision to implement Commission Directive 2014/80/EU of 20 June 2014 amending Annex II to Directive 2006/118/EC of the European Parliament 	<p>The substances and threshold values set out in Schedule 5 to S.I. No. 9 of 2010 have been reviewed and amended where necessary, based on existing monitoring information and international guidelines on appropriate threshold values.</p> <ul style="list-style-type: none"> Part A of Schedule 6 has been amended to include changes to the rules governing 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise.

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No. 366 of 2016)	and of the Council on the protection of groundwater against pollution and deterioration.	<ul style="list-style-type: none"> the determination of background levels for the purposes of establishing threshold values for groundwater pollutants and indicators of pollution. Part B of Schedule 6 has been amended to include nitrites and phosphorus (total) / phosphates among the minimum list of pollutants and their indicators which the Environmental Protection Agency (EPA) must consider when establishing threshold values. Part C of Schedule 6 amends the information to be provided to the Minister by the EPA with regard to the pollutants and their indicators for which threshold values have been established. 	Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2014 (S.I. No. 31 of 2014)	<ul style="list-style-type: none"> These Regulations, which give effect to Ireland's 3rd Nitrates Action Programme, provide statutory support for good agricultural practice to protect waters against pollution from agricultural sources 	<p>The Regulations include measures such as:</p> <ul style="list-style-type: none"> Periods when land application of fertilisers is prohibited Limits on the land application of fertilisers Storage requirements for livestock manure; and Monitoring of the effectiveness of the measures in terms of agricultural practice and impact on water quality. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
The Sustainable Development Goals National Implementation Plan (2018 – 2020)	<ul style="list-style-type: none"> National Implementation Plan 2018 - 2020 is in direct response to the 2030 Agenda for Sustainable Development and provides a whole-of-government approach to implement the 17 Sustainable Development Goals (SDGs). The Plan provides an 'SDG Matrix' which identifies the responsible Government Departments for each of the 169 targets. It also includes an 'SDG Policy Map' indicating the relevant national policies for each of the targets. 	<p>The Plan identifies four strategic priorities to guide implementation:</p> <ul style="list-style-type: none"> Awareness: raise public awareness of the SDGs; Participation: provide stakeholders opportunities to engage and contribute to follow-up and review processes, and further develop national implementation of the Goals; Support: encourage and support efforts of communities and organisations to contribute towards meeting the SDGs, and foster public participation; and Policy alignment: develop alignment of national policy with the SDGs and identify opportunities for policy coherence. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Infrastructure and Capital Investment Plan (2016-2021)	<ul style="list-style-type: none"> €27 billion multi-annual Exchequer Capital Investment Plan, which is supported by a programme of capital investment in the wider State sector, and which over the period 2016 to 2021 will help to lay the foundations for continued growth in Ireland. 	<ul style="list-style-type: none"> This Capital Plan reflects the Government's commitment to supporting strong and sustainable economic growth and raising welfare and living standards for all. It includes allocations for new projects across a number of key areas and funding to ensure that the present stock of national infrastructure is refreshed and maintained. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Union (Birds and Natural Habitats) (Sea-Fisheries) Regulations 2013 (S.I. 290 of 2013)	These regulations have been drafted to implement the responsibilities of the Minister for Agriculture Food and the Marine in relation to sea fisheries in European sites, in accordance with the Habitats and Birds Directives as transposed by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011).	<ul style="list-style-type: none"> Regulation 3 provides for the submission of a Fisheries Natura Plan in relation to planned fisheries; Regulation 4 provides for a screening of a Fisheries Natura Plan to determine whether or not an appropriate assessment is required; Regulation 5 provides for an appropriate assessment of a Fisheries Natura Plan and also provides for public and statutory consultation; Regulation 6 provides for the Minister to make a determination to adopt a Fisheries Natura Plan. The Minister may amend, withdraw or revoke a plan; Regulation 7 provides for publication of the adopted Fisheries Natura Plan; Regulation 8 provides for a Risk Assessment of unplanned fisheries and also provides for public and statutory consultation on the assessment; Regulation 9 provides for the issue of a Natura Declaration to prohibit, restrict including restricting by permit, control, etc. of sea fishing activities; Regulation 10 provides for Natura Permits to be issued where required by Natura Declarations; and Regulations 11 to 31 deal with functions of authorised officers and related matters, offences, etc. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Ireland's National Renewable Energy Action Plan 2010 (Irish Government submission to the European Commission)	<ul style="list-style-type: none"> The National Renewable Energy Action Plan (NREAP) sets out the Government's strategic approach and concrete measures to deliver on Ireland's 16% target under Directive 2009/28/EC. 	<ul style="list-style-type: none"> The NREAP sets out the Member State's national targets for the share of energy from renewable sources to be consumed in transport, electricity and heating and cooling in 2020, and demonstrates how the Member State will meet its overall national target established under the Directive. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the

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Strategy for Renewable Energy (2012-2020)	<ul style="list-style-type: none"> The Government's overarching strategic objective is to make renewable energy an increasingly significant component of Ireland's energy supply by 2020, so that at a minimum it will achieve its legally binding 2020 target in the most cost-efficient manner for consumers. Of critical importance is the role which the renewable energy sector plays in job creation and economic activity as part of the Government's action plan for jobs. 	<p>This document sets out five strategic goals, reflecting the key dimensions of the renewable energy challenge to 2020:</p> <ul style="list-style-type: none"> Increasing on and offshore wind, Building a sustainable bioenergy sector, Fostering R&D in renewables such as wave & tidal, Growing sustainable transport; and Building out robust and efficient networks. 	<p>achievement of the objectives of the regulatory framework for environmental protection and management.</p> <p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Governments White Paper 'Ireland's Transition to a Low Carbon Energy Future' (2015 – 2030)	<p>The White Paper sets out a vision and a framework to guide Irish energy policy between now and 2030. A complete energy policy update informed by the vision to transform Ireland into a low carbon society and economy by 2050.</p>	<p>2030 will represent a significant milestone, meaning:</p> <p>Reduced GHG emissions from the energy sector by between 80% and 95% Ensuring that secure supplies of competitive and affordable energy remain available to citizens and businesses.</p>	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
National Policy Position on Climate Action and Low Carbon Development (2014)	<ul style="list-style-type: none"> The National Policy Position provides a high-level policy direction for the adoption and implementation by Government of plans to enable the State to move to a low carbon economy by 2050. Statutory authority for the plans is set out in the Climate Action and Low Carbon Development Act 2015. 	<p>National climate policy in Ireland:</p> <ul style="list-style-type: none"> Recognises the threat of climate change for humanity; Anticipates and supports mobilisation of a comprehensive international response to climate change, and global transition to a low-carbon future; Recognises the challenges and opportunities of the broad transition agenda for society; and Aims, as a fundamental national objective, to achieve transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Climate Action and Low Carbon Development Act 2015, as amended	<ul style="list-style-type: none"> An Act to provide for the approval of plans by the Government in relation to climate change for the purpose of pursuing the transition to a low carbon, climate resilient and environmentally sustainable economy. 	<p>When considering a plan or framework, for approval, the Government shall endeavour to achieve the national transition objective within the period to which the objective relates and shall, in endeavouring to achieve that objective, ensure that such objective is achieved by the implementation of measures that are cost effective and shall, for that purpose, have regard to:</p> <ul style="list-style-type: none"> The ultimate objective specified in Article 2 of the United Nations Framework Convention on Climate Change done at New York on 9 May 1992 and any mitigation commitment entered into by the European Union in response or otherwise in relation to that objective, The policy of the Government on climate change, Climate justice, Any existing obligation of the State under the law of the European Union or any international agreement referred to in section 2; and <p>The most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency.</p>	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
Climate Action Plan	<p>The Climate Action Plan 2021 provides a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and setting Ireland on a path to reach net-zero emissions by no later than 2050, as committed to in the Programme for Government and set out in the Climate Act 2021.</p>	<p>The Plan lists the actions needed to deliver on our climate targets and sets indicative ranges of emissions reductions for each sector of the economy. It will be updated annually, including in 2022, to ensure alignment with Ireland's legally binding economy-wide carbon budgets and sectoral ceilings.</p>	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Plan needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.</p>
National Clean Air Strategy [in preparation]	<p>The Clean Air Strategy will provide the strategic policy framework necessary to identify and promote integrated measures across government policy that are required to reduce air pollution and promote cleaner air while delivering on wider national objectives.</p>	<ul style="list-style-type: none"> Having a National Strategy will provide a policy framework by which Ireland can develop the necessary policies and measures to comply with new and emerging EU legislation. The Strategy should also help tackle climate change. The Strategy will consider a wider range of national policies that are relevant to clean 	<p>Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with</p>

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		<ul style="list-style-type: none"> air policy such as transport, energy, home heating and agriculture. In any discussion relating to clean air policy, the issue of people's health is paramount and this will be a strong theme of the Strategy. 	all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
EirGrid's Grid25 Strategy and associated Grid25 Implementation Programme 2017-2022	EirGrid's mission is to develop, maintain and operate a safe, secure, reliable, economical and efficient transmission system for Ireland; <i>"Our vision is of a grid developed to match future needs, so it can safely and reliably carry power all over the country to the major towns and cities and onwards to every home, farm and business where the electricity is consumed and so it can meet the needs of consumers and generators in a sustainable way."</i>	<ul style="list-style-type: none"> Grid25, EirGrid's roadmap to uprate the electricity transmission grid by 2025, continues to be implemented so as to increase the capacity of the grid, to satisfy future demand, and to help Ireland meet its target of 40 per cent of electricity from renewable energy by 2020. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
All Island Grid Study 2008	<ul style="list-style-type: none"> The All Island Grid Study is the first comprehensive assessment of the ability of the electrical power system and, as part of that, the transmission network ("the grid") on the island of Ireland to absorb large amounts of electricity produced from renewable energy sources. The objective of this five-part study is to assess the technical feasibility and the relative costs and benefits associated with various scenarios for increased shares of electricity sourced from renewable energy in the all island power system. 	<p>Key conclusions of the study:</p> <ul style="list-style-type: none"> The presented results indicate that the differences in cost between the highest cost and the lowest cost portfolios are low (7%), given the assumptions made and costs included in the Study. All but the high coal-based portfolio lead to significant reductions of CO₂ emissions compared to portfolio 1 All but the high coal-based portfolio lead to reductions on the dependency of the all island system on fuel and electricity imports. The limitations of the study may overstate the technical feasibility of the portfolios analysed and could impact the costs and benefits resulting. Further work is required to understand the extent of such impact. Timely development of the transmission networks, requiring means to address the planning challenge, is a precondition for implementation of the portfolios considered. Market mechanisms must facilitate the installation of complementary, i.e. flexible, dispatchable plant, so as to maintain adequate levels of system security. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Strategy for the Future Development of National and Regional Greenways (2018)	<ul style="list-style-type: none"> The objective of this Strategy is to assist in the strategic development of nationally and regionally significant Greenways in appropriate locations constructed to an appropriate standard in order to deliver a quality experience for all Greenways users. It also aims to increase the number and geographical spread of Greenways of scale and quality around the country over the next 10 years with a consequent significant increase in the number of people using Greenways as a visitor experience and as a recreational amenity. 	<ul style="list-style-type: none"> A Strategic Greenway network of national and regional routes, with a number of high capacity flagship routes that can be extended and/or link with local Greenways and other cycling and walking infrastructure; Greenways of scale and appropriate standard that have significant potential to deliver an increase in activity tourism to Ireland and are regularly used by overseas visitors, domestic visitors and locals thereby contributing to a healthier society through increased physical activity; Greenways that provide a substantially segregated off road experience linking places of interest, recreation and leisure in areas with beautiful scenery of different types with plenty to see and do; and Greenways that provide opportunities for the development of local businesses and economies, and Greenways that are developed with all relevant stakeholders in line with an agreed code of practice. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Water Resources Plan	<ul style="list-style-type: none"> The NWRP is a plan on how to provide a safe, secure and reliable water supply to customers for the next 25 years, without causing adverse impact on the environment. The objective of the NWRP is to set out how we intend to maintain the supply and demand for drinking water over the short, medium and long term whilst minimising the impact on the environment. <p>The preparation of the NWRP has been divided into two phases, the combination of which will become the final NWRP. The NWRP Framework Plan (Phase 1) has now been adopted. Phase 2 of the NWRP (four Regional Water Resources Plans), currently in preparation, will address the needs across the 535 individual water supplies and identify the solutions to address these needs</p>	<p>The key objectives of the plan are to:</p> <ul style="list-style-type: none"> Identify areas where there are current and future potential water supply shortfalls, taking into account normal and extreme weather conditions Assess the current and future water demand from homes, businesses, farms, and industry Consider the impacts of climate change on Ireland's water resources Develop a drought plan advising measures to be taken before and during drought events Develop a plan detailing how we deal with the material that is produced as a result of treating drinking water Identify, develop and assess options to help meet potential shortfalls in water supplies Assess the water resources available at a national level including lakes, rivers and groundwater 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Strategic Plan for Aquaculture Development (2014-2020)	Vision: <i>"Aquaculture in RC is economically, socially and ecologically sustainable, with a developed infrastructure, strong human potentials and an organized market. The consumption of aquaculture products is equal or above EU average, while the technological development of the sector is among the best in the EU."</i>	<p>General development and growth objectives of marine and freshwater aquaculture (2014 – 2020):</p> <ul style="list-style-type: none"> Strengthen the social, business and administrative environment for aquaculture development Increase in the total production to 24,050 tonnes while adhering to the principles of economic, social and ecological sustainability Improvement of the perception and increase in the national consumption of National 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with

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		products	other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Construction 2020, A Strategy for a Renewed Construction Sector	<ul style="list-style-type: none"> Construction 2020 sets out a package of measures agreed by the Government and is aimed at stimulating activity in the building industry. The Strategy aims both to increase the capacity of the sector to create and maintain jobs, and to deliver a sustainable sector, operating at an appropriate level. It seeks to learn the lessons of the past and to ensure that the right structures and mechanisms are in place so that they are not repeated. 	<p>This Strategy therefore addresses issues including:</p> <ul style="list-style-type: none"> A strategic approach to the provision of housing, based on real and measured needs, with mechanisms in place to detect and act when things are going wrong; Continuing improvement of the planning process, striking the right balance between current and future requirements; The availability of financing for viable and worthwhile projects; Access to mortgage finance on reasonable and sustainable terms; Ensuring we have the tools we need to monitor and regulate the sector in a way that underpins public confidence and worker safety; Ensuring a fit for purpose sector supported by a highly skilled workforce achieving high quality and standards; and Ensuring opportunities are provided to unemployed former construction workers to contribute to the recovery of the sector. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Sustainable Development: A Strategy for Ireland (1997)	<ul style="list-style-type: none"> The overall aim of this Strategy is to ensure that economy and society in Ireland can develop to their full potential within a well-protected environment, without compromising the quality of that environment, and with responsibility towards present and future generations and the wider international community. 	<ul style="list-style-type: none"> The Strategy addresses all areas of Government policy, and of economic and societal activity, which impact on the environment. It seeks to re-orientate policies as necessary to ensure that the strong growth Ireland enjoys and seeks to maintain will be environmentally sustainable. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Landscape Strategy for Ireland 2015-2025 and National Landscape Character Assessment (pending preparation)	<ul style="list-style-type: none"> The National Landscape Strategy will be used to ensure compliance with the European Landscape Convention and to establish principles for protecting and enhancing the landscape while positively managing its change. It will provide a high-level policy framework to achieve balance between the protection, management and planning of the landscape by way of supporting actions. Landscape Strategy Vision: <i>“Our landscape reflects and embodies our cultural values and our shared natural heritage and contributes to the well-being of our society, environment and economy. We have an obligation to ourselves and to future generations to promote its sustainable protection, management and planning.”</i> 	<p>The objectives of the National Landscape Strategy are to:</p> <ul style="list-style-type: none"> Implement the European Landscape Convention by integrating landscape into the approach to sustainable development; Establish and embed a public process of gathering, sharing and interpreting scientific, technical and cultural information in order to carry out evidence-based identification and description of the character, resources and processes of the landscape; Provide a policy framework, which will put in place measures at national, sectoral - including agriculture, tourism, energy, transport and marine - and local level, together with civil society, to protect, manage and properly plan through high quality design for the sustainable stewardship of the landscape; Ensure that we take advantage of opportunities to implement policies relating to landscape use that are complementary and mutually reinforcing and that conflicting policy objectives are avoided in as far as possible. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Ireland's National Waste Policy 2020 – 2025	The Policy sets out new targets to tackle waste and move towards a circular economy.	The plan includes halving our food waste by 2030, the introduction of a deposit and return scheme for plastic bottles and cans, a ban on certain single use plastics from July 2021, and a levy on disposable cups. Other measures include applying green criteria and circular economy principles in all public procurement, a waste recovery levy to encourage recycling, and ensuring all packaging is reusable or recyclable by 2030.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Hazardous Waste Management Plan (EPA) 2014-2020	<p>This Plan sets out the priorities to be pursued over the next six years and beyond to improve the management of hazardous waste, taking into account the progress made since the previous plan and the waste policy and legislative changes that have occurred since the previous plan was published. Section 26 of the Waste Management Act 1996 as amended, sets out the overarching objectives for the National Hazardous Waste Management Plan. In this context, the following objectives are included as priorities for the revised Plan period:</p> <ul style="list-style-type: none"> To prevent and reduce the generation of hazardous waste by industry and society generally; To maximise the collection of hazardous waste with a view to reducing the environmental and health impacts of any unregulated waste; To strive for increased self-sufficiency in the management of hazardous waste and to minimise hazardous waste export; To minimise the environmental, health, social and economic impacts of hazardous waste generation and management. 	<p>The revised Plan makes 27 recommendations under the following topics:</p> <ul style="list-style-type: none"> Prevention Collection Self-sufficiency Regulation Legacy issues North-south cooperation Guidance and awareness Implementation 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Ministerial Guidelines such as Sustainable Rural Housing Guidelines and Flood Risk Management Guidelines	<ul style="list-style-type: none"> The Department produces a range of guidelines designed to help planning authorities, An Bord Pleanála, developers and the general public and cover a wide range of issues amongst others, architectural heritage, child care facilities, landscape, quarries and residential density. 	<ul style="list-style-type: none"> The Minister issues statutory guidelines under Section 28 of the Act which planning authorities and An Bord Pleanála are obliged to have regard to in the performance of their planning functions. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
HSE Healthy Ireland Framework for Improved Health and Wellbeing 2013-2025	<ul style="list-style-type: none"> The vision is: <i>"A Healthy Ireland, where everyone can enjoy physical and mental health and wellbeing to their full potential, where wellbeing is valued and supported at every level of society and is everyone's responsibility."</i> 	<p>These four goals are interlinked, interdependent and mutually supportive:</p> <ul style="list-style-type: none"> Goal 1: Increase the proportion of people who are healthy at all stages of life Goal 2: Reduce health inequalities Goal 3: Protect the public from threats to health and wellbeing Goal 4: Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Our Sustainable Future: A framework for Sustainable Development for Ireland 2012	A medium to long term framework for advancing sustainable development and the green economy in Ireland. It identifies spatial planning as a key challenge for sustainable development and sets a series of measures to address these challenges.	<ul style="list-style-type: none"> Sets out the challenges facing us and how we might address them in making sure that quality of life and general wellbeing can be improved and sustained in the decades to come. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007 – 2020 (2007)	<ul style="list-style-type: none"> White paper setting out a framework for delivering a sustainable energy future in Ireland. Outlines strategic Goals for: <ul style="list-style-type: none"> Security of Supply Sustainability of Energy Competitiveness of Energy Supply 	<p>The underpinning Strategic Goals are:</p> <ul style="list-style-type: none"> Ensuring that electricity supply consistently meets demand Ensuring the physical security and reliability of gas supplies to Ireland Enhancing the diversity of fuels used for power generation Delivering electricity and gas to homes and businesses over efficient, reliable and secure networks Creating a stable attractive environment for hydrocarbon exploration and production Being prepared for energy supply disruptions 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Adaptation Framework (NAF) 2018 and associated regional, local and sectoral adaptation plans	<ul style="list-style-type: none"> NAF specifies the national strategy for the application of adaptation measures in different sectors and by local authorities in their administrative areas in order to reduce the vulnerability of the State to the negative effects of climate change and to avail of any positive effects that may occur 	<ul style="list-style-type: none"> Adaptation under this Framework should seek to minimise costs and maximise the opportunities arising from climate change. Adaptation actions range from building adaptive capacity (e.g. increasing awareness, sharing information and targeted training) through to policy and finance-based actions. Adaptation actions must be risk based, informed by existing vulnerabilities of our society and systems and an understanding of projected climate change. Adaptation actions taken to increase climate resilience must also consider impacts on other sectors and levels of governance 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
2030 Climate and Energy Framework	Adopted October 2014, includes EU-wide targets and policy objectives for the period from 2021 to 2030.	<p>Key targets for 2030:</p> <ul style="list-style-type: none"> At least 40% cut in greenhouse gas emissions (from 1990 levels). At least 32% share for renewable energy. This was revised upwards in 2018. At least 32.5% improvement in energy efficiency. This was revised upwards in 2018. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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National Renewable Energy Action Plan (2010)	<ul style="list-style-type: none"> Sets out the Member State's national targets for the share of energy from renewable sources to be consumed in transport, electricity and heating and cooling in 2020, and demonstrates how the Member State will meet its overall national target established under the Directive. 	<p>Including Ireland's 16% target of gross final consumption to come from renewables by 2020.</p>	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Investment Framework for Transport in Ireland (NIFTI)	The NIFTI was published in March 2021 and is the Department of Transport's contribution to Project Ireland 2040, Government's long-term strategy for accommodating population growth in a sustainable manner. NIFTI has been developed to ensure that our transport sectoral strategy is underpinned by and supports the achievement of the National Strategic Objectives set out in the National Planning Framework.	NIFTI sets out the strategy for the development and management of Ireland's land transport network (walking, cycling, public transport and roads) over the next two decades. NIFTI sets out a hierarchy of investment for travel modes. Active Travel and public transport will be promoted over less sustainable modes such as the private car. A hierarchy of intervention types has been developed to ensure that investment is proportionate to the problem identified. The four high-level categories for intervention are highlighted as below.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Energy Efficiency Action Plan for Ireland (2009 – 2020)	<ul style="list-style-type: none"> This is the second National Energy Efficiency Action Plan for Ireland. 	<ul style="list-style-type: none"> The Plan reviews the original 90 actions outlined in the first Plan and updates/renews/removes them as appropriate. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Energy & Climate Plan (NECP) 2021 – 2030	Ireland's National Energy & Climate Plan (NECP) 2021-2030 takes into account energy and climate policies developed up to 2019, the levels of demographic and economic growth identified in the National Planning Framework - Project 2040 and includes all of the climate and energy measures as set out in the National Development Plan 2018-2027.	The planned policies and measures that were identified up to the end of 2019, collectively deliver a 30% reduction by 2030 in non-Emission Trading Systems greenhouse gas emissions (from 2005 levels). Ireland is committed to achieving a 7% annual average reduction in greenhouse gas emissions between 2021 and 2030. The NECP was drafted in line with the current EU effort-sharing approach, before the Government committed to this higher level of ambition, and therefore does not reflect this higher commitment. Ireland is currently developing those policies and measures and intends to integrate the revision of the NECP into the process which will be required for increasing the overall EU contribution under the Paris Agreement.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Wildlife Act of 1976 Wildlife (Amendment) Act, 2000	<ul style="list-style-type: none"> The act provides protection and conservation of wild flora and fauna. 	<ul style="list-style-type: none"> Provides protection for certain species, their habitats and important ecosystems Give statutory protection to NHAs Enhances wildlife species and their habitats Includes more species for protection 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Actions for Biodiversity (2017-2021) Ireland's National Biodiversity Plan	<ul style="list-style-type: none"> Sets out strategic objectives, targets and actions to conserve and restore Ireland's biodiversity and to prevent and reduce the loss of biodiversity in Ireland and globally. 	<ul style="list-style-type: none"> To mainstream biodiversity in the decision-making process across all sectors. To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity. To increase awareness and appreciation of biodiversity and ecosystem services. To conserve and restore biodiversity and ecosystem services in the wider countryside. To conserve and restore biodiversity and ecosystem services in the marine environment. To expand and improve on the management of protected areas and legally protected species. To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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National Broadband Plan (2012)	<ul style="list-style-type: none"> Sets out the strategy to deliver high speed broadband throughout Ireland. 	<p>The Plan sets out:</p> <ul style="list-style-type: none"> A clear statement of Government policy on the delivery of High-Speed Broadband. Specific targets for the delivery and rollout of high-speed broadband and the speeds to be delivered. The strategy and interventions that will underpin the successful implementation of these targets. A series of specific complementary measures to promote implementation of Government policy in this area. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities (Water Policy) Regulations of 2003 (SI 722 of 2003) European Communities (Water Policy) Regulations of 2003 (SI 350 of 2014) European Communities Environmental Objectives (Surface waters) Regulations of 2009 (SI 272 of 2009)	<ul style="list-style-type: none"> Transpose the Water Framework Directive into legislation. Outlines the general duty of public authorities in relation to water. Identifies the competent authorities in charge of water policy (amended to Irish Water in 2013) and gives EPA and the CER the authority to regulate and supervise their actions. 	<ul style="list-style-type: none"> Requires the public to be informed and consulted on the Plan and for progress reports to be published on River Basin Districts (RBDs). Implements a Register of protected areas, Classification systems and Monitoring programmes for water bodies. Allows the competent authority to recover the cost of damage/destruction of status of water body. Outlines environmental objectives and programme of measures and environmental quality standards for priority substances. Outlines criteria for assessment of groundwater. Outlines environmental objectives to be achieved for surface water bodies. Outlines surface water quality standards. Establishes threshold values for the classification and protection of surface waters against pollution and deterioration in quality. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Communities Environmental Objectives (Groundwater) Regulations of 2010 (SI 9 of 2010)	<ul style="list-style-type: none"> Transpose the requirements of the Groundwater Directive 2006/118/EC into Irish Legislation. 	<ul style="list-style-type: none"> Outlines environmental objectives to be achieved for groundwater bodies of groundwater against pollution and deterioration in quality. Sets groundwater quality standards. Outlines threshold values for the classification and protection of groundwater. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Water Pollution Acts 1977 to 1990	<ul style="list-style-type: none"> The Water Pollution Acts allow Local Authorities the authority regulate and supervise actions relating to water in their division. 	<p>The Water Pollution Acts enable local authorities to:</p> <ul style="list-style-type: none"> Prosecute for water pollution offences. Attach appropriate pollution control conditions in the licensing of effluent discharges from industry, etc., made to waters. Issue notices ("section 12 notices") to farmers, etc., specifying measures to be taken within a prescribed period to prevent water pollution. Issue notices requiring a person to cease the pollution of waters and requiring the mitigation or remedying of any effects of the pollution in the manner and within the period specified in such notices; Seek court orders, including High Court injunctions, to prevent, terminate, mitigate or remedy pollution/its effects. Prepare water quality management plans for any waters in or adjoining their functional areas. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Water Services Act 2007 Water Services (Amendment) Act 2012 Water Services Act (No. 2) 2013	<ul style="list-style-type: none"> Provides the water services infrastructure. Outlines the responsibilities involved in delivering and managing water services. Identifies the authority in charge of provision of water and waste water supply. Irish Water was given the responsibility of the provision of water and waste water services in the amendment act during 2013, therefore these services are no longer the responsibility of the 34 Local Authorities in Ireland. 	<p>Key strategic objectives include:</p> <ul style="list-style-type: none"> Ensuring Irish Water delivers infrastructural projects that meet key public health, environmental and economic objectives in the water services sector. Ensuring the provision of adequate water and sewerage services in the gateways and hubs listed in the National Spatial Strategy, and in other locations where services need to be enhanced. Ensuring good quality drinking water is available to all consumers of public and group water supplies, in compliance with national and EU drinking water standards Ensuring the provision of the remaining infrastructure needed to provide secondary waste water treatment, for compliance with the requirements of the EU Urban Waste water Treatment Directive. Promoting water conservation through Irish Water's Capital Investment Plan, the Rural Water Programme and other measures. Monitoring the on-going implementation of septic tanks inspection regime and the National Inspection Plan for Domestic Waste Water Treatment Systems. Ensuring a fair funding model to deliver water services. Overseeing the establishment of an economic regulation function under the CER. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan (2014-2016)	<ul style="list-style-type: none"> This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term. 	<p>Six strategic objectives as follows:</p> <ul style="list-style-type: none"> Meet Customer Expectations. Ensure a Safe and Reliable Water Supply. Provide Effective Management of Waste water. Protect and Enhance the Environment. Support Social and Economic Growth. Invest in the Future. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Raised Bog SAC Management Plan and Review of Raised Bog Natural Heritage Areas	<ul style="list-style-type: none"> Aims to meet nature conservation obligations while having regard to national and local economic, social and cultural needs 	<ul style="list-style-type: none"> Ensure that the implications of management choices for water levels, quantity and quality are fully explored, understood and factored into policy making and land use planning. Review the current raised bog NHA network in terms of its contribution to the national conservation objective for raised bog habitats and determine the most suitable sites to replace the losses of active raised bog habitat and high bog areas within the SAC network and to enhance the national network of NHAs. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Agri-vision 2015 Action Plan	Outlines the vision for agricultural industry to improve competitiveness and response to market demand while respecting and enhancing the environment	not applicable	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Agri-Food Strategy 2030	<p>This 10-year Strategy sets out four high-level "Missions" to be achieved in order to develop such a system in Ireland:</p> <ol style="list-style-type: none"> 1. A Climate Smart, Environmentally Sustainable Agri-Food Sector 2. Viable and Resilient Primary Producers with Enhanced Wellbeing 3. Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad 4. An Innovative, Competitive and Resilient Sector, driven by Technology and Talent 	Each of the Missions has a set of Goals which are underpinned by a series of Actions.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Rural Environmental Protection Scheme (REPS) Agri-Environmental Options Scheme (AEOS) Green, Low-Carbon, Agri-environment Scheme (GLAS)	<ul style="list-style-type: none"> Agri-environmental funding schemes aimed at rural development for the environmental enhancement and protection. GLAS is the new replacement for REPS and AEOS which are both expiring. 	<ul style="list-style-type: none"> Establish best practice farming methods and production methods in order to protect landscapes and maximise conservation. Protect biodiversity, endangered species of flora and fauna and wildlife habitats. Ensure food is produced with the highest regard to the environment. Implement nutrient management plans and grassland management plans. Protect and maintain water bodies, wetlands and cultural heritage. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Rural Development Programme	The National Rural Development Programme, prepared by the Department of Agriculture, Fisheries and Food, sets out a national programme based on the EU framework for rural development and prioritises improving the competitiveness of agriculture, improving the environment and improving the quality of life in rural areas	<p>At a more detailed level, the programme also:</p> <ul style="list-style-type: none"> Supports structural change at farm level including training young farmers and encouraging early retirement, support for restructuring, development and innovation; Aims to improve the environment, biodiversity and the amenity value of the countryside by support for land management through funds such as Natura 2000 payments etc.; and Aims to improve quality of life in rural areas and encouraging diversification of economic activity through the implementation of local development strategies such as non-agricultural activities 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Realising our Rural Potential: The Action Plan for Rural Development 2017	The Plan aims to unlock the potential of rural Ireland through a framework of supports at national and local level which will ensure that people who live in rural areas have increased opportunities for employment locally, and access to public services and social networks that support a high quality of life.	The Plan contains 276 actions across five key pillars. The five pillars are: <ul style="list-style-type: none"> Supporting Sustainable Communities, Supporting Enterprise and Employment, Maximising our Rural Tourism and Recreation Potential, Fostering Culture and Creativity in Rural Communities, and Improving Rural Infrastructure and Connectivity. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Forestry Programme (2014-2020)	<ul style="list-style-type: none"> Represents Ireland's proposals for 100% State aid funding for a new Forestry Programme for the period 2014 – 2020. 	Measures include the following: <ul style="list-style-type: none"> Afforestation and Creation of Woodland NeighbourWood Scheme Forest Roads Reconstitution Scheme Woodland Improvement Scheme Native Woodland Conservation Scheme Knowledge Transfer and Information Actions Producer Groups Innovative Forest Technology Forest Genetic Reproductive Material Forest Management Plans 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
River Basin Management Plan	<ul style="list-style-type: none"> The River Basin Management Plan sets out the measures planned to maintain and improve the status of waters. 	<ul style="list-style-type: none"> Aim to protect and enhance all water bodies in the RBD and meet the environmental objectives outlined in Article 4 of the Water Framework Directive. Identify and manages water bodies in the RBD. Establish a programme of measures for monitoring and improving water quality in the RBD. Involve the public through consultations. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Peatlands Strategy (2015-2025)	This Strategy aims to provide a long-term framework within which all of the peatlands within the State can be managed responsibly in order to optimise their social, environmental and economic contribution to the well-being of this and future generations.	Objectives of the Strategy: <ul style="list-style-type: none"> To give direction to Ireland's approach to peatland management. To apply to all peatlands, including peat soils. To ensure that the relevant State authorities and state-owned companies that influence such decisions contribute to meeting cross-cutting objectives and obligations in their policies and actions. To ensure that Ireland's peatlands are sustainably managed so that their benefits can be enjoyed responsibly. To inform appropriate regulatory systems to facilitate good decision making in support of responsible use. To inform the provision of appropriate incentives, financial supports and disincentives where required. To provide a framework for determining and ensuring the most appropriate future use of cutover and cutaway bogs. To ensure that specific actions necessary for the achievement of its objectives are clearly identified and delivered by those involved in or responsible for peatlands management or for decisions affecting their management. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Flood Risk Management Plans arising from National Catchment Flood Risk Assessment and Management Programme	<ul style="list-style-type: none"> The national Catchment Flood Risk Assessment and Management (CFRAM) programme commenced in Ireland in 2011 and is being overseen by the Office of Public Works. The CFRAM Programme is intended to deliver on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive. 	CFRAM Studies have been undertaken for all River Basin Districts. The studies are focusing on areas known to have experienced flooding in the past and areas that may be subject to flooding in the future either due to development pressures or climate change. Flood Risk and Hazard mapping, including Flood Extent Mapping, was finalised in 2017. The final outputs from the studies are the CFRAM Plans, finalised in 2018. The Plans define the current and future flood risk in the River Basin Districts and set out how this risk can be managed.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Draft National Bioenergy Plan 2014 - 2020	The Draft Bioenergy Plan sets out a vision as follows: <ul style="list-style-type: none"> Bioenergy resources contributing to economic development and sustainable growth, generating jobs for citizens, supported by coherent policy, planning and regulation, and managed in an integrated manner. 	Three high level goals, of equal importance, based on the concept of sustainable development are identified: <ul style="list-style-type: none"> To harness the market opportunities presented by bioenergy in order to achieve economic development, growth and jobs. To increase awareness of the value, opportunities and societal benefits of developing 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with

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		bioenergy. • To ensure that bioenergy developments do not adversely impact the environment and its living and non-living resources.	all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Draft Renewable Electricity Policy and Development Framework (DCCAE) 2016	Goal: To optimise the opportunities in Ireland for renewable electricity development on land at significant scale, to serve both the All Island Single Electricity Market and any future regional market within the European Union, in accordance with European and Irish law, including Directive 2009/28/EC: On the promotion of the use of energy from renewable resources.	Objective: To develop a Policy and Development Framework for renewable electricity generation on land to serve both the All Island Single Electricity Market and any future regional market within the European Union, with particular focus on large scale projects for indigenous renewable electricity generation. This will, inter alia, provide guidance for planning authorities and An Bord Pleanála.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Alternative Fuels Infrastructure for the Transport Sector (DTTAS) 2017- 2030	This Framework sets targets to achieve an appropriate level of alternative fuels infrastructure for transport, which is relative to national policy and Irish market needs. Non-infrastructure-based incentives to support the use of the infrastructure and the uptake of alternative fuels are also included within the scope of the Framework.	Targets for alternative fuel infrastructure include the following: <ul style="list-style-type: none"> • AFV forecasts • Electricity targets • Natural gas (CNG, LNG) targets • Hydrogen targets • Biofuels targets • LPG targets • Synthetic and paraffinic fuels targets 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Food Wise 2025 (DAFM)	Food Wise 2025 sets out a ten-year plan for the agri-food sector. It underlines the sector's unique and special position within the Irish economy, and it illustrates the potential which exists for this sector to grow even further.	Food Wise 2025 identifies ambitious and challenging growth projections for the industry over the next ten years including: <ul style="list-style-type: none"> • 85% increase in exports to €19 billion. • 70% increase in value added to €13 billion. • 60% increase in primary production to €10 billion. • The creation of 23,000 additional jobs all along the supply chain from producer level to high-end value-added product development. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Tourism Action Plan 2019-2021	The Tourism Action Plan 2019-2021 sets out actions that the Tourism Leadership Group has identified as priorities to be progressed until 2021 in order to maintain sustainable growth in overseas tourism revenue and employment. Each action involves specific tourism stakeholders, both in the public and private sectors, all of whom we expect to proactively work towards the completion of actions within the specified timeframe.	The Plan contains 27 actions focusing on the following areas: <ul style="list-style-type: none"> • Policy Context • Marketing Ireland as a Visitor Destination • Enhancing the Visitor Experience • Research in the Irish Tourism Sector • Supporting Local Communities in Tourism • Wider Government Policy • International Context • Co-ordination Structures 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Tourism Policy Statement: People, Place and Policy – Growing Tourism to 2025	The main goal of this policy statement is to have a vibrant, attractive tourism sector that makes a significant contribution to employment across the country; is economically, socially and environmentally sustainable; helps promote a positive image of Ireland overseas, and is a sector in which people want to work.	The Tourism Policy Statement sets three headline targets to be achieved by 2025: <ul style="list-style-type: none"> • Overseas tourism revenue of €5 billion per year net of inflation excluding carrier receipts; • 250,000 people employed in tourism; and • 10 million overseas visitors to Ireland per year. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Draft Renewable Electricity Policy and Development Framework (DCCAE)	Goal: To optimise the opportunities in Ireland for renewable electricity development on land at significant scale, to serve both the All Island Single Electricity Market and any future regional market within the European Union, in accordance with European and Irish law, including Directive 2009/28/EC: On the promotion of the use of energy from renewable resources.	Objective: To develop a Policy and Development Framework for renewable electricity generation on land to serve both the All Island Single Electricity Market and any future regional market within the European Union, with particular focus on large scale projects for indigenous renewable electricity generation. This will, inter alia, provide guidance for planning authorities and An Bord Pleanála. Methodology: Development of the Policy and Development Framework is to be informed by the carrying out of an SEA, including widespread consultation with stakeholders and public, and with AA under the Habitats Directive.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
People Place and Policy - Growing Tourism to 2025, (DTAS, 2014)	Growing Tourism to 2025 is a policy framework for the development of tourism within the Country.	The framework establishes the overall tourism goal of Government: <ul style="list-style-type: none"> • Employment in the tourism sector will be 250,000 by 2025, compared with around 200,000 at present. • There will be 10 million visits to Ireland annually by 2025. The Government's ambition is that overseas tourism revenue will reach €5 billion in real terms by 2025.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Waterways Ireland Heritage Plan 2016-2020	The overarching aim of the Plan is to: <i>"Identify and protect the unique waterways heritage and promote its sustainable use for the enjoyment of this and future generations"</i> .	Four objectives of the Plan include the following: <ul style="list-style-type: none"> • Objective 1: Fostering partnerships to continue building waterway heritage knowledge through storing information, undertaking research and developing best practice. • Objective 2: Promoting awareness, appreciation and enjoyment of our waterway heritage with a focus on community engagement. • Objective 3: Promoting the integrated management, conservation, protection and sustainable use of the inland navigable waterway asset. • Objective 4: To develop Waterways Ireland as a heritage organisation committed to achieving the aim of this plan. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Tourism Development and Innovation – A Strategy for Investment 2016-2022, (Fáilte Ireland, 2016)	This strategy sets out the framework and mechanism for the delivery of investment to cities, towns, villages, communities and businesses across the country. It identifies priorities to support innovation in the sector to retain and grow the country's competitiveness in the marketplace. Its ultimate aim is to strengthen the appeal of Ireland for international visitors.	The objectives of the Tourism Development and Innovation Strategy are: <ul style="list-style-type: none"> • To successfully and consistently deliver a world class visitor experience; • To support a tourism sector that is profitable and achieves sustainable levels of growth and delivers jobs; • To facilitate communities to play an enhanced role in developing tourism in their locality, thereby strengthening and enriching local communities; and • To recognise, value and enhance Ireland's natural environment as the cornerstone of Irish tourism. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Aquaculture Acts 1997 to 2006 (Sea-Fisheries and Maritime Jurisdiction Act 2006 (8/2006), s. 1(3)) Fisheries (Amendment) Act 1997 (23/1997) Fisheries and Foreshore (Amendment) Act 1998 (54/1998), ss. 2, 3 and 4 Fisheries (Amendment) Act 2001 (40/2001) Sea-Fisheries and Maritime Jurisdiction Act 2006 (8/2006)	The Aquaculture and Foreshore Management Division ensures the efficient and effective management of Aquaculture licensing and Foreshore licensing in respect of Aquaculture and Sea Fishery related activities.	The Strategic Objectives of the Aquaculture and Foreshore Management Division are: <ul style="list-style-type: none"> • to develop and manage an efficient and effective regulatory framework in respect of Aquaculture licensing and Foreshore licensing of Aquaculture and Sea Fishery related activities; • to secure a fair financial return from the State's foreshore estate in the context of Aquaculture licensing and Foreshore licensing in respect of Aquaculture and Sea Fishery related activities; to progressively reduce arrears in the clearing of licence applications.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Foreshore Acts 1933 to 2011	The Foreshore Acts require that a lease or licence must be obtained from the Minister for Housing, Planning and Local Government for the carrying out of works or placing structures or material on, or for the occupation of or removal of material from, State-owned foreshore, which represents the greater part of the foreshore. Construction of permanent structures on privately owned foreshore also required the prior permission of the Minister under the Foreshore Act.	<ul style="list-style-type: none"> • Developments on the foreshore require planning permission in addition to a Foreshore Lease/Licence/Permission. All Foreshore Leases, Licences • Permissions are without prejudice to the powers of the local planning authority. Applicants should, therefore, consult initially with the local planning authority regarding their proposal. • In the case of developments on foreshore for, by or on behalf of a Local Authority where an EIS is required, applications should be made to An Bord Pleanála under Part XV, Planning and Development Act 2000. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Marine Planning Development Management Bill (General Scheme), 2019	The Bill seeks to establish in law a completely new regime for the maritime area which will replace existing State and development consent regimes and streamline arrangements on the basis of a single consent principle.	One of the aims is to establish a legal basis for An Bord Pleanála and coastal local authorities to consent to development in the maritime area, while retaining existing foreshore and planning permission provisions for aquaculture and sea fisheries related development. It will also provide for a single environmental impact assessment (EIA) and a single appropriate assessment (AA), where applicable.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Marine Planning Framework (NMPF)	The NMPF details how marine activities will interact with each other in an ocean space that is under increasing spatial pressure, ensuring the sustainable use of Ireland's marine resources to 2040. The NMPF has been prepared with an ecosystem-based approach and informed by best available knowledge.	The National Marine Planning Framework (NMPF) brings together all marine-based human activities for the first time, outlining the Government's vision, objectives and marine planning policies for each marine activity. The NMPF is intended as the marine equivalent to the National Planning Framework. This approach will enable the Government to: <ul style="list-style-type: none"> • set a clear direction for managing our seas • clarify objectives and priorities • direct decision makers, users and stakeholders towards strategic, plan-led, and efficient use of our marine resources 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
National Seafood Operational Programme (2014-2020)	The Operational Programme (OP) supported by the European Maritime and Fisheries Fund (EMFF) in Ireland aims at achieving key national development priorities along with the EU's "Europe 2020" objectives. The OP supports the general reform of the EU's Common Fisheries Policy (CFP) and the development of its Integrated Maritime Policy (IMP) in Ireland. The OP strategy is designed around the Irish national priorities in the agri-food sector: 'Act Smart' by encouraging knowledge and innovation, 'Think Green' through a responsible and sustainable use of resources, 'Achieve Growth' in order to maintain and create jobs.	The Irish OP is organised around the priorities including: <ul style="list-style-type: none"> • Union Priority 1 (UP1): €67 million (28% of the total allocation) aim at assuring the sustainable development of fishing activities, while protecting the marine environment. • Union Priority 2 (UP2): €30 million (12% of the total allocation) will support the Irish National Strategic Plan for Aquaculture that aims at boosting the competitiveness of the aquaculture sector. • Union Priority 3 (UP3): €84.8 million (35.4% of the total allocation) will go towards compliance with CFP rules regarding control and data collection. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Harnessing Our Ocean Wealth: An Integrated Marine Plan for Ireland 2012	Harnessing Our Ocean Wealth is an Integrated Marine Plan (IMP), setting out a roadmap for the Government's vision, high-level goals and integrated actions across policy, governance and business to enable our marine potential to be realised. Implementation of this Plan will see Ireland evolve an integrated system of policy and programme planning for our marine affairs.	<ul style="list-style-type: none"> • Sustainable economic growth of marine/ maritime sectors; • Increase the contribution to the national GDP; • Deliver a business friendly yet robust governance, policy and planning framework; • Protect and conserve our rich marine biodiversity and ecosystems; • Manage our living and non-living resources in harmony with the ecosystem; • Implement and comply with environmental legislation; • Building on our maritime heritage, strengthen our maritime identity; • Increase our awareness of the value, opportunities and societal benefits; and • Engagement and participation by all. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
All Ireland Pollinator Plan 2021-2025	The All-Ireland Pollinator Plan is an island-wide attempt to reverse declines in pollinating insects in order to ensure the sustainability of our food, avoid additional economic impacts on agriculture, and protect the health of the environment.	The main objectives include: <ul style="list-style-type: none"> • Making farmland, public land and private land in Ireland pollinator friendly; • Raising awareness of pollinators and how to protect them; • Managed pollinators – supporting beekeepers and growers; • Expanding our knowledge of pollinators and pollination service; and • Collecting evidence to track change and measure success. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Regional/ County/Local Level			
Southern Regional Spatial and Economic Strategy 2019-2031	The Regional Spatial and Economic Strategies provide a long-term regional level strategic planning and economic framework in support of the implementation of the National Planning Framework.	The Southern Regional Spatial and Economic Strategy includes provisions for its 10 constituent local authorities: Cork City Council; Cork County Council; Clare County Council; Kerry County Council; Limerick City and County Council; Tipperary County Council; Waterford County Council; Carlow County Council; Kilkenny County Council; and Wexford County Council.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Integrated Implementation Plan 2019-2024	The priorities in the Integrated Infrastructure Plan align with the objectives and priorities set out in the Greater Dublin Transport Strategy, focused on improving public and sustainable transport. While the bulk of the Plan relates solely to the Greater Dublin Area, certain areas such as public transport services and activities related to small public service vehicles are dealt with on a national basis.	The Implementation Plan identifies investment proposals for a number of areas including: <ul style="list-style-type: none"> • Bus • Light Rail; • Heavy Rail; • Integration Measures and Sustainable Transport Investment; • Integrated Service Plan; and • Integration and Accessibility. 	framework for environmental protection and management. Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
NPWS Conservation Plans and/or Conservation Objectives for SACs and SPAs	Management planning for nature conservation sites has a number of aims. These include: <ul style="list-style-type: none"> • To identify and evaluate the features of interest for a site • To set clear objectives for the conservation of the features of interest • To describe the site and its management • To identify issues (both positive and negative) that might influence the site • To set out appropriate strategies/management actions to achieve the objectives 	<ul style="list-style-type: none"> • Conservation objectives for SACs and SPAs (i.e. sites within the Natura 2000 network) have to be set for the habitats and species for which the sites are selected. • These objectives are used when carrying out appropriate assessments for plans and projects that might impact on these sites. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Groundwater Protection Schemes	A Groundwater Protection Scheme provides guidelines for the planning and licensing authorities in carrying out their functions, and a framework to assist in decision-making on the location, nature and control of developments and activities in order to protect groundwater.	<ul style="list-style-type: none"> • A Groundwater Protection Scheme aims to maintain the quantity and quality of groundwater, and in some cases improve it, by applying a risk assessment-based approach to groundwater protection and sustainable development. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Land Use Plans (including Development Plans, Local Area Plans and Strategic Development Zone Planning Schemes) in force within the Strategy area and in other adjoining planning authorities, including: Waterford City & County Development Plan 2022-2028; Waterford City Development Plan 2013-2019; Waterford County Development Plan 2011-2017; Kilkenny City and County Development Plan 2021-2027; Kilkenny County Development Plan 2014-2020; Waterford City Centre Urban Renewal Scheme 2015; Waterford North Quays Strategic Development Zone Planning Scheme 2018; Ferrybank Belview Local Area Plan 2017; and Tramore Local Area Plan 2014-2020.	<ul style="list-style-type: none"> • Outline planning objectives for land use development. • Strategic framework for planning and sustainable development including those set out in National Planning Framework and the Regional Economic and Spatial Strategy. • Set out the policies and proposals to guide development in the relevant area. 	<ul style="list-style-type: none"> • Identify future infrastructure, development and zoning required. • Protect and enhances amenities and environment. • Guide planning authority in assessing proposals. • Aim to guide development in the area and the amount of nature of the planned development. • Aim to promote sustainable development. • Provide for economic development and protect natural environmental, heritage. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Local Economic and Community Plans (LECPs) prepared by Local Authorities within the Strategy area and Local Authorities in adjoining counties	<ul style="list-style-type: none"> The overarching vision for each LECP is: "to promote the well-being and quality of life of citizens and communities" 	<ul style="list-style-type: none"> The purpose of the LECP, as provided for in the Local Government Reform Act 2014, is to set out, for a six-year period, the objectives and actions needed to promote and support the economic development and the local and community development of the relevant local authority area, both by itself directly and in partnership with other economic and community development stakeholders. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Landscape Character Assessments within the Strategy area and in adjoining counties	Characterises the geographical dimension of the landscape.	<ul style="list-style-type: none"> Identifies the quality, value, sensitivity and capacity of the landscape area. Guides strategies and guidelines for the future development of the landscape. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Noise Action Plans prepared by Local Authorities within the Strategy area and Local Authorities in adjoining counties	Noise Action Plans are prepared in accordance with the requirements of the Environmental Noise Regulations 2006, Statutory Instrument 140 of 2006. These Regulations give effect to the EU Directive 2002/49/EC relating to the assessment and management of environmental noise. This Directive sets out a process for managing environmental noise in a consistent manner across the EU and the Noise Regulations set out the approach to meeting the requirements of the Directive in Ireland.	<p>The main purpose of Noise Action Plans is to:</p> <ul style="list-style-type: none"> Inform and consult the public about noise exposure, its effects and the measures which may be considered to address noise problems Address strategic noise issues by requiring competent authorities to draw up action plans to manage noise issues and their effects Reduce noise, where possible, and maintain the environmental acoustic quality where it is good 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Climate Adaptation Strategies prepared by Local Authorities within the Strategy area and Local Authorities in adjoining counties, including: Waterford City & County Council's Climate Change Adaptation Strategy 2019-2024 and Kilkenny County Council Climate Change Adaptation Strategy 2019-2024	Climate Change Adaptation Strategies represent a proactive step by Local Authorities in the process of adaptation planning to build resilience and respond effectively to the threats posed by climate change.	<p>The Climate Change Adaptation Strategies takes on the role as the primary instrument at local level to:</p> <ul style="list-style-type: none"> Ensure a proper comprehension of the key risks and vulnerabilities of climate change; Bring forward the implementation of climate resilient actions in a planned and proactive manner; and Ensure that climate adaptation considerations are mainstreamed into all plans and policies and integrated into all operations and functions of County Council. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Local Authority Renewable Energy Strategy (LARES) prepared by Local Authorities within the Strategy area and Local Authorities in adjoining counties	The Strategy sets out the framework for the delivery of sustainable and renewable energies throughout the County.	The LARES outlines the potential for a range of renewable energy resources and developments and acknowledges the significant contribution that they can make to the county in terms of energy security, reduced reliance on traditional fossil fuels, enabling future energy exports, meeting assigned national targets and the transition to a low carbon economy.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Transforming Waterford: Integrated Transport Proposal 2017	Transforming Waterford: Integrated Transport Proposal seeks to 'deliver an urban centre that can be a real driver for regional development and a centre of consequence'.	<p>It contains some proposals and objectives of relevance to the Strategy, including:</p> <ul style="list-style-type: none"> A redevelopment of the North Quays, the iconic Ard Ri and Michael Street sites; A unique pedestrian friendly City Centre; A city with the only truly integrated transport hub; and A dedicated walking and cycling route traversing throughout the whole city. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.

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Planning, Land Use and Transportation Study 2004	The Planning, Land Use and Transportation Study (PLUTS) was adopted by Waterford and Kilkenny Councils in 2004 and seeks to 'provide a vision and strategy for the development of Waterford City & Environs up to the year 2020'. A key element of the document is to achieve the 'critical mass to allow the city to reinforce and develop its role as the economic driver of the South-East region of Ireland'.	Some of the core provisions which are relevant to the strategy include: <ul style="list-style-type: none"> • A population increase of almost 30,000 people (or 57% population growth) in Waterford City & Environs; • Investment needs for almost 12,800 new jobs; • Requirement for approximately 11,500 new dwellings, predominantly to the north of the River Suir; • Retail expansion of the city centre; • The creation of a city centre bridge for pedestrians and cyclists to link the redeveloped North Quays with the city centre; • Provision of a rail-passenger platform on the North Quays as part of a new public transport interchange; and • Development of a high-quality bus-based public transport system in the city, supported by park and ride facilities. 	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Draft Cycle Network Plan for Waterford City and Environs 2014	The Draft Cycle Network Plan for Waterford City and Environs 2014 set out the envisaged cycling network for the Waterford Metropolitan Area (WMA). The study was an important component in Waterford City and County Council's vision of developing a cycling culture within the WMA.	Preparation of the Cycle Network was informed by the National Cycle Policy Framework 2009-2020, which aimed for 10% of all journeys being made by bicycle by the year 2020. The Network Study identified many existing barriers to cycling through the Metropolitan Area, including watercourses such as the River Suir, St. John's River and Kilbarry Bog, lack of permeability in residential areas, railways lines and a motorway	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Southern Region Waste Management Plan 2015-2021	These plans give effect to national and EU waste policy, and address waste prevention and management (including generation, collection and treatment).	To manage wastes in a safe and compliant manner, a clear strategy, policies and actions are required.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Fáilte Ireland Tourism plans, strategies, including those relating to the Ireland's Ancient East brands	Fáilte Ireland's work includes preparing various plans and strategies for Ireland's Hidden Heartlands, the Wild Atlantic Way, Ireland's Ancient East and other brands and initiatives. These plans are subject to their own environmental assessment processes and any project arising is required to be consistent with and conform with the provisions of all adopted/approved Statutory Policies, Strategies, Plans and Programmes, including provisions for the protection and management of the environment.	Some of Fáilte Ireland's plans and strategies include various projects relating to land use and infrastructural development, including those relating to development of land on or land and the carrying out of land use activities. Many of these projects exist already while some are not currently in existence. The Statutory Policies, Strategies, Plans and Programmes that provide for different projects undergo a variety of environmental assessments. These assessments ensure that environmental effects are considered, including: those arising from new and intensified uses and activities; and those arising from various sectors such as tourism.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
Various existing, planned and emerging projects provided for by the above plans and programmes	These projects have been provided for by higher-level plans and programmes.	These projects will contribute towards the development of the area to which the Plan relates and/or wider area and will contribute towards environmental protection and management.	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc., individually or in combination with others, potential in-combination effects (see Section 7.3) may arise. Implementation of the Strategy needs to comply with all environmental legislation and align with and cumulatively contribute towards – in combination with other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.