STRATEGIC ENVIRONMENTAL ASSESSMENT
ENVIRONMENTAL REPORT

FOR THE

DRAFT TRANSPORT STRATEGY
FOR THE
GREATER DUBLIN AREA
2022-2042

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
GDA	Greater Dublin Area
GSI	Geological Survey of Ireland
pNHA	Proposed Natural Heritage Area
NHA	Natural Heritage Area
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
WFD	Water Framework Directive

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 can be 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 Transport Strategy for the Greater Dublin Area 2022-2042 (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 emerging Draft Transportation Strategy for the Greater Dublin Area 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, SEA is mandatory for the Strategy under the SEA Directive and transposing Regulations, as amended.

The findings of the SEA are expressed in this Environmental Report which accompanies the Draft Strategy on public display and may be amended in the future in order to take

account of any submissions received on the Draft Strategy or associated documents.

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

Section 2 The Draft Transport Strategy

2.1 Introduction

Under the Dublin Transport Authority Act, the National Transport Authority (NTA) must review its transport strategy every 6 years. Arising from the review of the 2016 plan, an updated strategy has been developed which sets out the framework for investment in transport infrastructure and services over the next two decades to 2042.

The Transport Strategy for the Greater Dublin Area 2022-2042 will replace the previous strategy, titled the Transport Strategy for the Greater Dublin Area 2016-2035, which was approved by the then Minister for Transport, Tourism and Sport in 2016.

That 2016-2035 Transport Strategy set out to contribute to the economic, social and cultural progress of the Greater Dublin Area (GDA) by providing for the efficient, effective and sustainable movement of people and goods. In other words, it was about making the Dublin region a better place for people who live and work there, and for those who visit.

It did so by providing a framework for the planning and delivery of transport infrastructure and services in the GDA. It has also provided a transport planning policy around which other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing, water and power, could align their own investment priorities.

It has been an essential component, along with investment programmes in other sectors, for the development of the GDA which covers the counties of Dublin, Meath, Kildare and Wicklow. Major projects provided for in that strategy included:

- Luas Cross City;
- The reopening of the Phoenix Park Tunnel Rail Line;
- The on-going roll out of cycle tracks and greenways;
- Metrolink;
- DART+ Programme;
- Investment in bus priority and bus service improvements – BusConnects Dublin; and
- M7 Naas to Newbridge widening, Osberstown Interchange and Sallins Bypass.

2.2 Strategy Aim

To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth.

2.3 Strategy Objectives

An Enhanced Natural and Built Environment
To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.

Connected Communities and Better Quality of Life
To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.

A Strong Sustainable Economy
To support economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to, and facilitating the efficient movement of goods.

An Inclusive Transport System
To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

2.4 Relationship with other relevant Plans and Programmes

Of course no transport strategy can ever be a standalone document. A transport strategy will always be part of a larger picture of overall national policies that must work towards a

single set of overall objectives. To a large extent, policies and objectives around issues such as land use, development, population distribution, investment, sustainability and climate action, for example, are determined by other state agencies and authorities, but must be fully reflected in any transport strategy.

As such, the Transport Strategy has been developed to be consistent with the spatial planning policies and objectives set out in the Regional Spatial and Economic Strategy (RSES). These objectives in turn are consistent with the National Planning Framework 2018 and the National Development Plan 2021-2030.

The hierarchy of strategic actions, such as plans and programmes, within which the Strategy sits include those detailed in Appendix I[1] (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. 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 Eastern and Midland Region (as adopted by the Eastern and Midland Regional Assembly, and finalised in January 2020) and associated Dublin Metropolitan Area Strategic Plan, 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. The Transport Strategy is based on national policies on sustainability as set out in the Climate Action Plan and recent climate action legislation.

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.

[1] Appendix I 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 to become familiar with the full details of each.

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.

The process is currently at a stage where this SEA Environmental Report has been prepared. Taking into account the content of SEA scoping submissions from environmental authorities and continuous scoping of the SEA, environmental impacts have been predicted, evaluated and mitigated. The findings of the assessment are presented in this SEA Environmental Report, which accompanies the Draft Strategy on public display as part of the required statutory public consultation.

A Stage 2 Appropriate Assessment (AA) Natura Impact Natura Impact Statement also accompanies the Draft Strategy. The Draft Strategy and associated SEA and AA documents have been prepared in an iterative manner whereby multiple revisions of each document were prepared, each informing subsequent iterations of the others.

Submissions made on the Strategy and associated SEA and AA documents will be taken into account and updates may be made to these documents as relevant and appropriate. On finalisation of the Strategy, an SEA Statement will be prepared which will summarise, inter alia, how environmental considerations have been integrated into the Strategy. The Strategy will be implemented and environmental monitoring – as well as lower tiers of environmental assessment – will be undertaken.

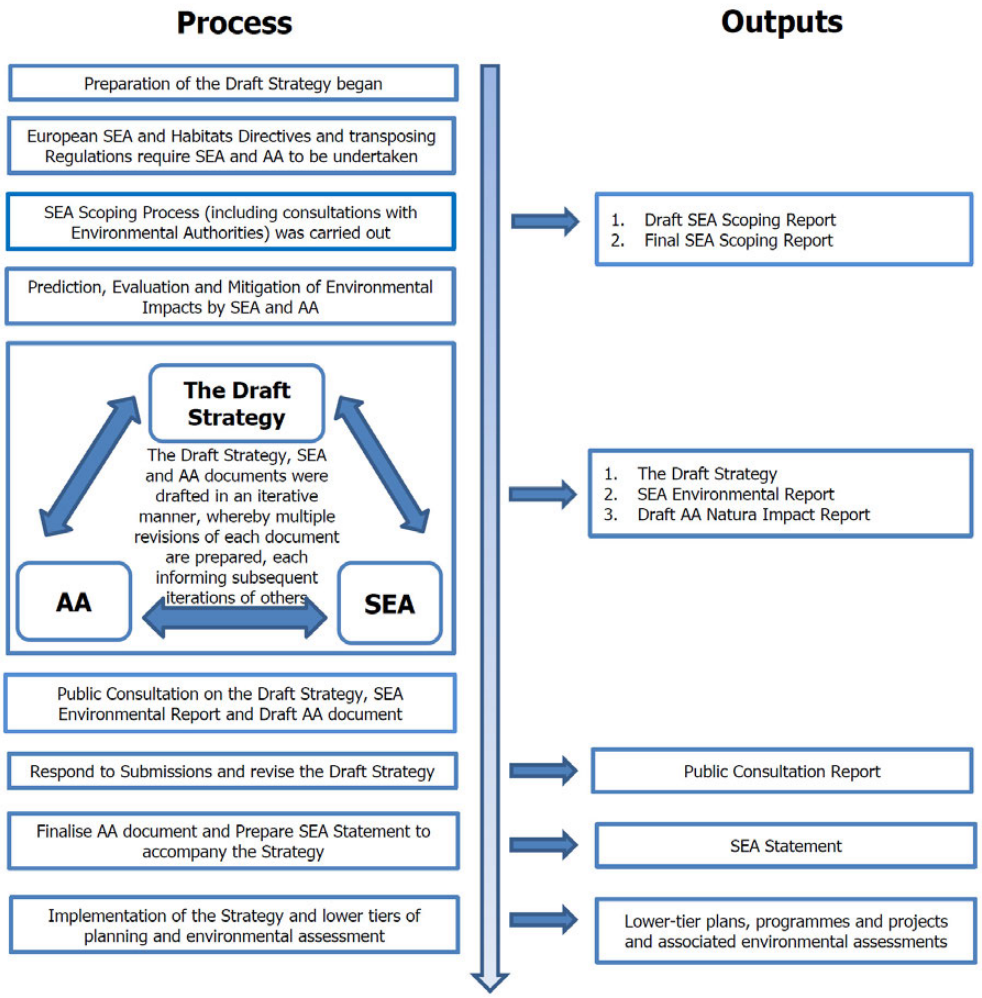

Figure 3.1 Overview of the Strategy, SEA and AA Process

3.2 Hierarchy of Planning and Environmental Assessment

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 these documents, a number of which are described below, and 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.

The **National Planning Framework 2040** (NPF) is a strategic development framework that sets out the long-term context for Ireland's physical development and associated progress in economic, social and environmental terms until 2040. The NPF has been subject to SEA and AA.

The various policies within the NPF are structured under National Policy Objectives (NPOs). NPOs were developed following extensive analysis and consultation and set a new way forward for regional and local planning and sustainable development policy in Ireland.

The key NPOs relevant to the development of the Transport Strategy include:

- NPO 1b: Population growth for the Eastern and Midland Region (EMR) of between 490,000 and 540,000 to 2040 (target population of almost 2.85 million);
- NPO 1c: 320,000 additional people in employment in the EMR (1.34 million in total);
- NPO 2a: A target of 50% of future population and employment growth will be focused in the existing five cities and their suburbs;
- NPO 3a: At least 40% of all new housing to be delivered nationally within the existing built-up areas of cities, towns and villages on infill and/or brownfield sites;
- NPO 3b: Deliver at least half (50%) of all new homes that are targeted in the five cities and suburbs of Dublin, Cork, Limerick, Galway and Waterford, within their existing built-up footprints;
- NPO 9: Settlements outside of 'City and Suburbs' may be identified for significant (i.e. 30% or more) rates of population growth at regional and local planning stages. The NPF makes reference to the fact that these settlements may lie within the commuter catchment of the City or in areas that have potential for high sustainable mode shares. This would align with settlements along the existing rail lines and future high capacity transport corridors in the GDA;
- NPO 27: Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages; and
- NPO 68: Metropolitan Area Strategic Plans (MASPs) may enable up to 20% of the phased population growth targeted in the principal City and Suburban area, to be accommodated in the wider Metropolitan Area i.e. outside the city and suburbs, in addition to growth identified for the Metropolitan area. The NPF states that this should be subject to any relocated growth being in the form of compact development, such as infill or a sustainable urban extension and/or being served by high capacity public transport and/or related to significant employment provision.

Key future growth enablers directly related to transport include:

- Delivering the key rail projects set out in the Transport Strategy for the Greater Dublin Area including MetroLink and the DART+ Programme (previously referred to as DART Expansion);
- The development of an improved bus-based system, with better orbital connectivity and integration with other transport networks;
- Public realm and urban amenity projects, focused on streets and public spaces, especially in the area between the canals and where linked to social regeneration projects;
- Delivery of the cycle network set out in the Greater Dublin Area Cycle Network Plan inclusive of key commuter routes and urban greenways on canal, river and coastal corridors;
- Improving access to Dublin Airport, to include improved public transport access; and
- Facilitating the growth of Dublin Port through greater efficiency, limited expansion into Dublin Harbour and improved road access, particularly to/from the southern port area.

The **National Development Plan 2021-2030** (NDP) sets out the investment priorities that will underpin the successful implementation of the NPF up to 2030. National Strategic Outcomes (NSO) defined by the NPF have been incorporated into the NDP with further investment details. Some of the projects of relevance to the Strategy are summarised as follows:

NSO 2 – Enhanced Regional Accessibility
- Protection and Renewal Programme for National Roads;
- Investment in regional and commuter bus fleet;
- Various national road schemes; and
- Protection and renewal of the railway network.

NSO 3 – Strengthened Rural Economies and Communities
- Greenways Strategy;
- Active Travel in towns and villages; and
- "Connecting Ireland" public transport programme.

NSO 4 – Sustainable Mobility
- Metrolink;
- BusConnects Dublin;
- DART+ Programme;
- Continued investment in bus and train fleets;
- Transition urban bus fleet to low emission, including electric buses;
- Delivery of comprehensive cycling and walking network in metropolitan areas;
- Safe Routes to Schools Programme; and
- Undertake appraisal, planning and design of Luas network expansion to Bray, Finglas, Lucan, and Poolbeg.

NSO 6 - High-Quality International Connectivity
- Completion of the new North Runway for Dublin Airport; and
- Further infrastructural investment at Dublin Port to accommodate larger sea-going vessels and increase capacity.

NSO 8 – Transition to a Low-Carbon and Climate-Resilient Society
- Nearly one million electric vehicles on the road by 2030 with additional charging infrastructure to cater for growth
- An additional 500,000 sustainable mobility journeys per day by 2030;
- Transition to a low or zero emission public bus fleet;
- Expand the refuelling network for alternately fuelled vehicles to address freight emissions; and
- Comprehensive integrated public transport network for Ireland's cities connecting more people to more places.

Under the Planning Acts, the **Eastern and Midland Regional Spatial and Economic Strategy** (RSES), which has been subject to SEA and AA, addresses, inter alia, the following matters:

- Government policies or objectives related to population targets;
- Enabling job creation;
- Proposals for augmenting the economic performance of the region;
- The location of employment, industrial, commercial and retail development;
- The location of housing; and
- The provision of transportation, including public transportation.

When making the RSES, the Eastern and Midland Regional Assembly (EMRA) must ensure that it is consistent with the prevailing GDA Transport Strategy. This consistency relates to those elements of the RSES for which the NTA is responsible in terms of strategic planning, i.e. investment in public transport, roads, walking and cycling. The current RSES covers the period 2019-2031 and is consistent with the 2016-2035 Transport Strategy, as it incorporates the Strategy's measures in the appropriate manner.

In turn, the Transport Strategy 2022-42 is required to be consistent with the spatial and economic policies and objectives of the prevailing RSES. The NTA has cooperated closely with the EMRA in the development of the Transport Strategy. It has incorporated its population distribution and has taken into account the forecast future employment patterns. The Transport Strategy has been developed to align with, and support the objectives of, the current RSES.

The RSES provides the spatial framework for alignment of key transport infrastructure and investment throughout the Region, setting out locations for population and employment growth, with a focus on delivering compact growth within existing urban footprints in Dublin and designated settlements in the RSES Settlement Hierarchy.

Key transport policies which were developed in collaboration with NTA include Guiding Principles for Integration of Land use and Transport, and Transport Investment Priorities for the Region.

In addition to setting out Regional Strategic Outcomes (RSOs), which are aligned with the National Strategic Outcomes (NSOs) in the NPF, the RSES also identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives (RPOs). The following RPOs of the RSES are of most relevance in relation to Transport Strategy:

- RPO 4.2: Infrastructure investment and priorities shall be aligned with the spatial planning strategy of the RSES. All residential and employment developments should be planned on a phased basis in collaboration with infrastructure providers so as to ensure adequate capacity for services (e.g. transport) is available to match projected demand for services and that the assimilative capacity of the receiving environment is not exceeded;
- RPO 4.3: Support the consolidation and re-intensification of infill/brownfield sites to provide high density and people-intensive uses within the existing built up area of Dublin City and suburbs and ensure that the development of

future development areas is coordinated with the delivery of key public transport projects.

- RPO 4.31: Support Swords-Dublin Airport as a key location for airport-related economic development and employment provision linked to the protection and enhancement of access to Dublin Airport lands including the delivery of Metrolink.
- RPO 4.33: Support the continued development of Maynooth, coordinated with the delivery of strategic infrastructure including pedestrian and cycle linkages within the town and to the Royal Canal Greenway, DART expansion and road linkages forming part of the Maynooth Outer Orbital Route in a manner which supports future development and population growth and builds on synergies with Maynooth University promoting a knowledge-based economy;
- RPO 4.40: To support ongoing investment in public transport infrastructure, including the appraisal, planning and design of the Luas extension to Bray. The development of Bray-Fassaroe should be undertaken in collaboration between Wicklow County Council, Dún Laoghaire-Rathdown County Council and the transport agencies to ensure the delivery of enabling transportation infrastructure and services;
- RPO 4.48: Promote the improvement of the transport network within and serving Naas town, including delivery of a robust and efficient walking, cycling and bus network with strong links to Sallins Railway Station, key destinations within the town and to the North West Quadrant and town centre area.
- RPO 4.52: Support the delivery of new and enhanced public transport infrastructure in Naas and Sallins, including Park and Ride and interchange facilities as identified by the NTA and Kildare County Council;
- RPO 5.2: Support the delivery of key sustainable transport projects including Metrolink, DART and Luas expansion programmes, BusConnects and the Greater Dublin Metropolitan Cycle Network and ensure that future development maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, existing and planned;
- RPO 5.3: Future development in the Dublin Metropolitan Area shall be planned and designed in a manner that facilitates sustainable travel patterns, with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe attractive street environment for pedestrians and cyclists;
- RPO 5.8: Support the promotion and development of greenway infrastructure and facilities in the Dublin metropolitan area and to support the expansion and connections between key strategic cycle routes and greenways as set out in the NTA Greater Dublin Area Cycle Network Plan.
- RPO 8.1: The integration of transport and land use planning in the Region shall be consistent with the guiding principles expressed in the transport strategy of the RSES.
- RPO 8.2: The capacity and safety of the Region's strategic land transport networks will be managed and enhanced, including through the management of travel demand in order to ensure their optimal use.
- RPO 8.3: That future development is planned and designed in a manner which maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, both existing and planned and to protect and maintain regional accessibility.
- RPO 8.4: Land use plans within the GDA shall demonstrate a consistency with the NTA's Transport Strategy for the Greater Dublin Area and plans within or outside of the GDA shall be consistent with the guiding principles expressed in the RSES;
- RPO 8.5: To support the preparation of a regional strategy for freight transport in collaboration with the relevant transport agencies and the other Assemblies;
- RPO 8.6: In order to give local expression to the regional level Transport Strategy within the Region in conjunction with the NTA, Local Transport Plans (LTP) will be prepared for selected settlements in the Region.

A further set of RPOs detail the EMRA's support for the transport schemes and projects set out in the Transport Strategy for the GDA 2016-2035. The NTA has taken the above objectives, the population and employment forecasts, and the outcomes of our detailed liaison with the local authorities which translated the regional forecasts into local areas, and has prepared this Transport Strategy as a transportation response to the demand set out by the land use agencies. In this manner, the Transport Strategy is consistent with the RSES, as required.

The RSES also incorporates the Dublin **Metropolitan Area Strategic Plan** (MASP). This plan includes a number of guiding principles and identifies the strategic development corridors for accommodating future growth. It also sets out the enabling infrastructure, including transport. The MASP comprises a key input into the transport strategy by providing clear direction in terms of spatial planning policy at the Metropolitan level.

The Strategic Development Areas and Corridors identified by the MASP are set out below along with a selection of the identified enabling transport infrastructure:

- City Centre and Area within the M50 – Luas extensions, DART Underground, Dodder Bridge;
- North-South Corridor – DART+; Luas Bray, Access Roads;
- North-West Corridor – DART+, New Orbital Roads;
- South Western Corridor – DART+; and
- MetroLink / Green Line Corridor – Luas Green Line Upgrade; MetroLink.

The MASP also sets out the potential growth of the Strategic Employment Development Areas, which include:

- Docklands, Poolbeg and Grangegorman;
- Bray and Greystones;
- Dublin Enterprise Zone (Dublin 15);
- Dunboyne, Leixlip and Maynooth;
- Naas Road / Ballymount;
- Tallaght / Cookstown;
- Grange Castle;
- Cherrywood / Ballyogan / Sandyford; and
- Swords / Dublin Airport / South Fingal.

In July 2021 the **Climate Action and Low Carbon Development (Amendment) Act 2021** was signed into law.

This Act establishes the following national climate objective: "The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy."

To achieve that objective the Act sets out a number of actions. These include:

- The preparation of an annual update to the Climate Action Plan 2019;
- The preparation, not less frequently than once every 5 years, of a national long term climate action strategy (referred to as a 'national long term climate action strategy');
- The establishment of carbon budgets, aligned with the achievement of the national climate objective, for consecutive five year periods;
- The preparation of "sectoral emissions ceilings" which establish the maximum amount of greenhouse gas emissions that are permitted in different sectors of the economy during the five year period of a carbon budget;
- The preparation of "local authority climate action plans" covering periods of five years, which are required to specify the mitigation measures and the adaptation measures to be adopted by the relevant local authority in relation to climate matters; and
- An obligation that public bodies must take account of Climate Action Plans in the performance of their functions.

The Act provides that the first two five-year carbon budgets should equate to a total reduction of 51% over the period to 2030, relative to a baseline of 2018. While that overall target has not yet been disaggregated into sectoral targets, it is understood that the transport sector will be required to achieve this 51% reduction in full.

This is a highly significant and challenging target, which will fundamentally guide and direct transport provision and use in Ireland over the next decade. Achieving this target will require a major transformation in transport patterns, focused on increasing travel by sustainable modes and reducing travel by petrol/diesel powered vehicles.

At city, county and local levels, rolling City and County Development Plans and associated Local Area Plans are also subject to SEA 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) is being undertaken alongside the preparation of the Strategy.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The emerging conclusion of the AA is that the Strategy will not affect the integrity of the Natura 2000 network[2] of European sites.

The preparation of the Strategy, SEA and AA is taking 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.

[2] 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.

- 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 is taking 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 issues relevant to the environmental components which are specified under the SEA Directive[3].

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 authorities[4] 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 made by the Environmental Protection Agency (EPA), the Geological Survey of Ireland (of the Department of Environment, Climate and Communications) and Inland Fisheries Ireland (of the Department of Environment, Climate and Communications) have been taken into account in undertaking the assessments and preparing the Draft Strategy.

3.5 Environmental Report

In this SEA Environmental Report, which accompanies the Draft Strategy on public display and may be amended in the future in order to take account of any submissions received on the Draft Strategy or associated documents, 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.

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.

This version of the Environmental Report that is being placed on public display alongside the Draft Strategy may be updated in order to take account of any submissions made and in order to take account any changes that are made to the Draft Strategy that is being placed on public display.

The Environmental Report contains the information specified in Schedule 2 of the European Communities (Environmental Assessment of Certain Plans and Programmes)

[3] 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.

[4] Environmental authorities sent scoping notices as part of this process comprise: 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.

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 will be prepared that will include 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 and 9
(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	Non-Technical Summary
(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 Draft 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 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, if any, 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, cycling and light rail/metro.
- 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 or 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.

Ireland's Provisional Greenhouse Gas Emissions 1990-2017 (EPA, 2018) report details provisional estimates of greenhouse gas emissions for the period 1990-2017. For 2017, total national greenhouse gas emissions are estimated to be 60.75 million tonnes carbon dioxide equivalent (Mt CO_2 eq). This is 0.9% lower (0.53 Mt CO_2 eq) than emissions in 2016. Greenhouse gas emissions from the Transport sector decreased by 2.4% or 0.29 Mt CO_2eq in 2017. This is the first year of decreased emissions after four successive years of increases in transport emissions. In road transport in 2017, petrol use continued to decrease by 9.8% while diesel use increased by 0.4% and biofuels use increased by 35.6%.

The EPA 2021 publication *Ireland's Greenhouse Gas Emission Projections 2020-2040* provides an assessment of Ireland's total projected greenhouse gas emissions from 2020 to 2040, updated using the latest Inventory data for 2019. The report also includes an assessment of progress towards achieving its emission reduction targets for 2020 and 2030 as set out under the EU Effort Sharing Decision[5] and Effort Sharing Regulation[6]. Key findings identified as part of the report's package of documents are that:

- Implementation of "Additional Measures" (including those in the 2019 Climate Action Plan) is projected to save 58 Mt CO_2 eq over the period 2021-2030 compared to the "With Existing Measures". This represents a reduction of 1.8% per annum in emissions over the period.
- Ireland's emissions covered by the 2013-2020 EU Effort Sharing Decision target are estimated to have been 7% below 2005 levels in 2020. Ireland is estimated to have cumulatively exceeded its compliance obligations by 12.2 Mt CO_2 eq over the 2013- 2020 period, and will need to use credits and/or purchase surplus annual emission allocations from other member states to achieve compliance.
- These Projections indicate that Ireland can meet its non-ETS EU targets over the period 2021 to 2030 assuming full implementation of the 2019 Climate Action Plan and the use of the flexibilities available. Future, more ambitious targets as presented in the European Climate Law and Ireland's Climate Bill will require many (as yet unidentified) additional measures.
- Increased renewable electricity generation, including a projected 5GW of offshore wind generation, is expected to contribute to a 70% contribution of renewable energy in electricity generation by 2030. Energy industries emissions are projected to decrease by one third by 2030 compared to the most recent figures in 2019.
- Agriculture emissions are projected to decline by 1.2% per annum over the 2021- 2030 period, provided the 16.5 Mt CO_2 eq savings from the agriculture sector identified in the 2019 Climate Action Plan are realised. Increase use of protected urea fertilisers and low emission slurry spreading, along with other measures targeting methane emissions from animals, will be required.
- The impact of COVID is projected to have led to a 14% reduction in transport emissions in 2020 compared to 2019. The measures in the 2019 Climate Action Plan include 936,000 electric vehicles on the road by 2030 and are projected to reduce emissions to 25.5% below 2019 levels by 2030. It will be necessary to avoid a post-COVID surge in emissions to achieve that reduction.
- The projected impact of COVID in the residential sector in 2020 is an increase of almost 9% in emissions compared to 2019, driven by increased working from home. This highlights the need for our houses to become far more efficient, particularly in the context of broader home working. Implementing the 2019 Climate Action Plan measure for the installation of over 600,000 heat-pumps by 2030 as well as retrofitting 500,000 homes to a B2 equivalent BER will help achieve this.
- A strong impact from COVID is seen in the emissions projections for 2020 and 2021. A decrease of transport emissions and increase in residential emissions are the most obvious effects projected. Agriculture emissions are projected to have been little affected and energy emissions decreases are not primarily COVID related. As the economy exits from COVID restrictions, a "green recovery" where investment is targeted at measures which reduce or avoid greenhouse gas emissions, can result in better outcomes for society and the environment.
- The scale and pace of the changes needed to achieve the targets set out in the 2019 Climate Action Plan are significant, but the extent of change required to meet the Climate Bill and European Climate Law targets is unprecedented. Further ambitious measures in key sectors such as agriculture, transport and power generation will need to be identified, planned and implemented as soon as possible.

[5] Decision No 406/2009/EC of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

[6] Regulation (EU) 2018/842 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.

In 2020, the sectors with the largest contribution of emissions were agriculture (37.4%), transport (18.4%) and energy industries (14.8%). This projection includes the impact of COVID on the 2020 emissions, which due to national lockdowns, saw transport emissions decline, but agriculture emissions largely unaffected. The main source of emissions from the transport sector was road transport, accounting for approximately 95% of transport emissions in 2019. The contribution by the transport sector to Ireland's greenhouse gas emissions highlights the need for a concentrated effort to reduce transport emissions.

Ireland's National Policy position is to reduce CO_2 emissions in 2050 by 80% on 1990 levels across the Energy Generation, Built Environment and Transport sectors, with a goal of Climate neutrality in the Agriculture and Land-Use sector. The emissions for all of these sectors are rising, making achievement of long-term goals more difficult.

The National Climate Action Plan 2019 is an all of Government plan to tackle climate change and bring about a step change in Ireland's climate ambition over the coming years. The Plan sets out an ambitious course of action over the coming years to address the diverse and wide-ranging impacts climate disruption is having on Ireland's environment, society, economic and natural resources. It also sets out clear 2030 targets for each sector with the ultimate objective of achieving a transition to a competitive, low-carbon, climate-resilient, and environmentally sustainable society and economy by 2050.

The 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 2020[7]. SEAI's 2020 publication *Renewable Energy in Ireland Report* includes the most recent assessment of Ireland's progress towards renewable energy targets up to 2018.[8] This Report identifies that 7.2% of energy consumed in road and rail transport in 2018 was from renewable sources.

[7] 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

[8] The updated *Renewable Energy in Ireland Report* is due to be published in 2021. More information: https://www.seai.ie/data-and-insights/seai-statistics/release-calendar/

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 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 (SI No. 271 of 2002).

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

- Air quality in Ireland is generally good however there are localised issues;
- Nitrogen dioxide (NO_2) from transport emissions is polluting urban areas; and
- Ireland was above World Health Organization air quality guideline value levels at 33 monitoring sites – mostly due to the burning of solid fuel within settlements across the country.

Air pollution from transport is dominated by NO_x emissions. Of these, NO_2 is particularly impactful from a health perspective. The report describes that concentrations of NO_2 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 NO_2 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. These include:

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

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 indicators[9] 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.

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. There are number of Noise Action Plans in force within the Strategy area, including the Dublin Agglomeration Environmental Noise Action Plan (Dublin City Council, Fingal County Council; South Dublin County Council and Dún Laoghaire-Rathdown County Council) and separate Noise Action Plans for Meath , Kildare and Wicklow County Councils.

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, rail lines and Dublin Airport 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 Dublin agglomeration;
- Rail exceeding the flow threshold of 30,000 vehicle passages per year; and
- Dublin Airport.

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

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

[10] Day-evening-night level. It is a descriptor of noise level based on energy equivalent noise level (Leq) 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).

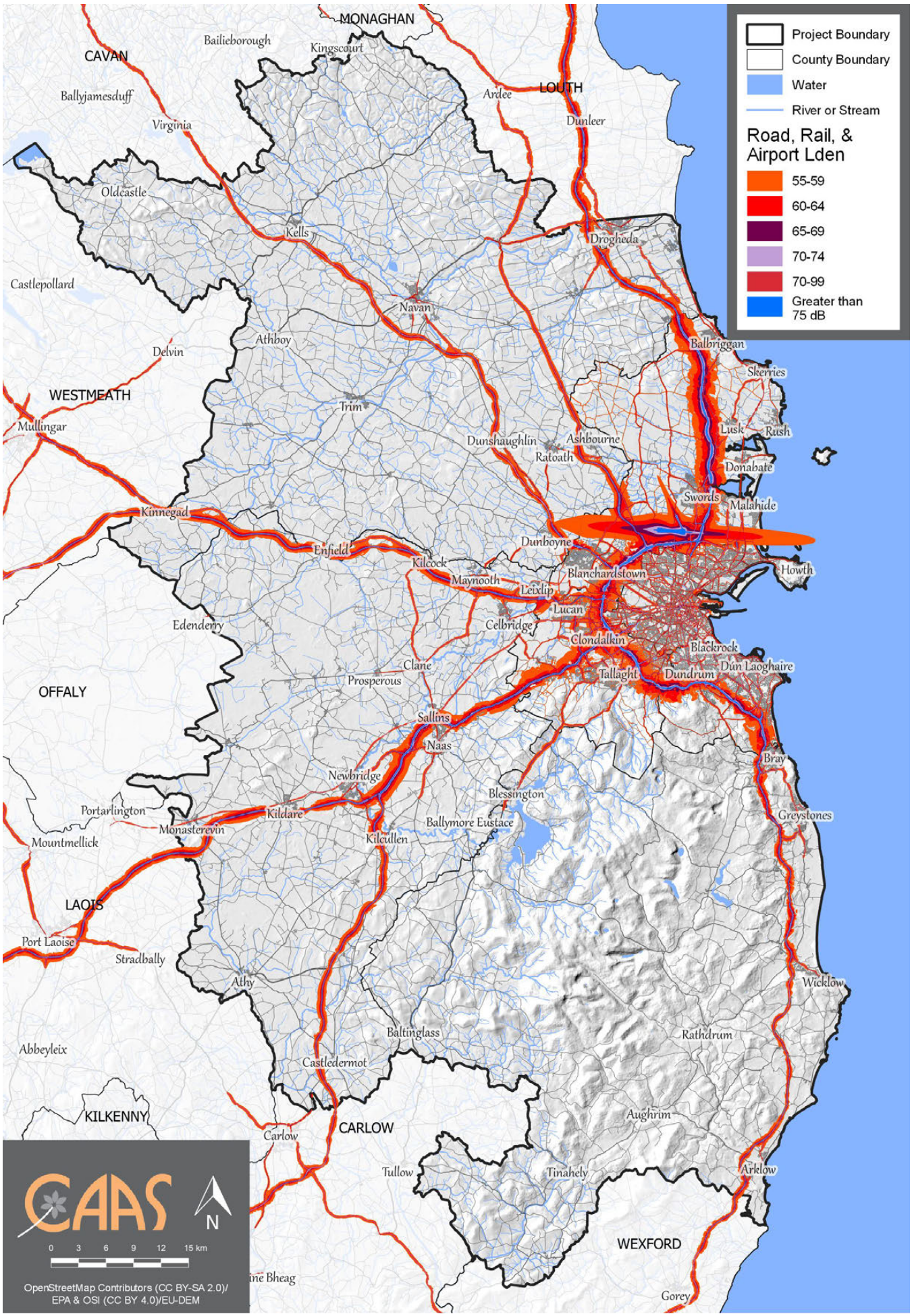

Figure 4.1 Noise Mapping L_{den} (day-evening-night composite noise indicator)

4.6 Population and Human Health

4.6.1 Population

The Strategy area covers four counties and was identified as having a total population of over 1.7 million persons (as per Census 2016), including: c. 1,347,400 persons in County Dublin; c. 195,000 persons in County Meath; c. 222,500 persons in County Kildare; and c. 142,400 persons in County Wicklow.

The Strategy area contains Dublin - the largest urban centre and only international city of scale in Ireland and accounts for over 40% of the national population. Most users of transport within the Strategy area will reside in and commute to and from urban/suburban areas.

Figure 4.2 shows population density per Electoral Division. The most populous divisions are generally concentrated within and surrounding the M50 motorway, along the coast (as far south as Wicklow), in areas of County Meath closest to Dublin and within north-east of County Kildare and along the M7 corridor. The uplands in County Wicklow, north-west and south of County Kildare and north County Meath 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 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).

There are currently[11] 18 Lower Tier Seveso Establishments and 17 Upper Tier Seveso

[11] HSA; Notified Seveso Establishments for Lower Tier (19 April 2021) and Upper Tier (22 December 2020). https://www.hsa.ie/eng/Your_Industry/Chemicals/Legislation_Enforcement/COMAH/List_of_Establishments/

Establishments located within the Strategy area.

Lower Tier Seveso Establishments:

- Astellas Ireland Co. Ltd. (Dublin 15)
- Brenntag Chemicals Distribution (Ireland) Ltd. (Dublin 24)
- Circle K Terminal 1 (Dublin 1)
- Circle K Yard 3 (Dublin 1)
- Clarochem Ireland Ltd. (Dublin 15)
- Electricity Supply Board (Dublin 1)
- Exolum Aviation Ireland Ltd. (Dublin 2)
- Gensys Power Ltd. (Dublin 11)
- Iarnrod Eireann (Dublin 1)
- Iarnrod Eireann (Dublin 8)
- Irish Distillers Ltd. (Dublin 22)
- Kayfoam Woolfson (Dublin 12)
- Sigma Aldrich Ireland Ltd. (County Wicklow)
- SK Biotek (County Dublin)
- Synergen Power Ltd t/a ESB Dublin Bay Power (Dublin 4)
- Xtratherm Ltd. (County Meath)
- Zoetis Belgium S.A. Ireland Branch (County Wicklow)
- Grassland Agro The Pound Road, Slane, (County Meath)

Upper Tier Seveso Establishments:

- Barclay Chemicals Manufacturing Ltd., t/a Barclay Crop Protection (Dublin 15)
- BOC Gases Ireland Ltd. (Dublin 12)
- Boliden Tara Mines DAC (County Meath)
- Calor Teoranta (Dublin 1)
- Chemco (Ireland) Ltd., t/a Chemsource Logistics (Dublin 15)
- Contract & General Warehousing Ltd. (Dublin 15)
- Dachser Ireland Ltd. (Dublin)
- Fareplay Energy Ltd. Under the Circle K Ire Energy Ltd. Group (Dublin 3)
- Guerbet Ireland ULC (Dublin 15)
- Indaver Ireland Ltd. (Dublin 1)
- Intel Ireland Ltd. (County Kildare)
- Irish Industrial Explosives Ltd. (County Meath)
- National Oil Reserves Agency Ltd. (Dublin 4)
- National Oil Reserves Agency Ltd. (Dublin 4)
- Tedcastles Oil Products (Dublin 1)
- Tedcastles Oil Products (Dublin 3)
- Valero Energy (Ireland) Ltd. (Dublin 1)

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

There is historic and predictive evidence of flooding within the area (see Section 4.10.11).

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

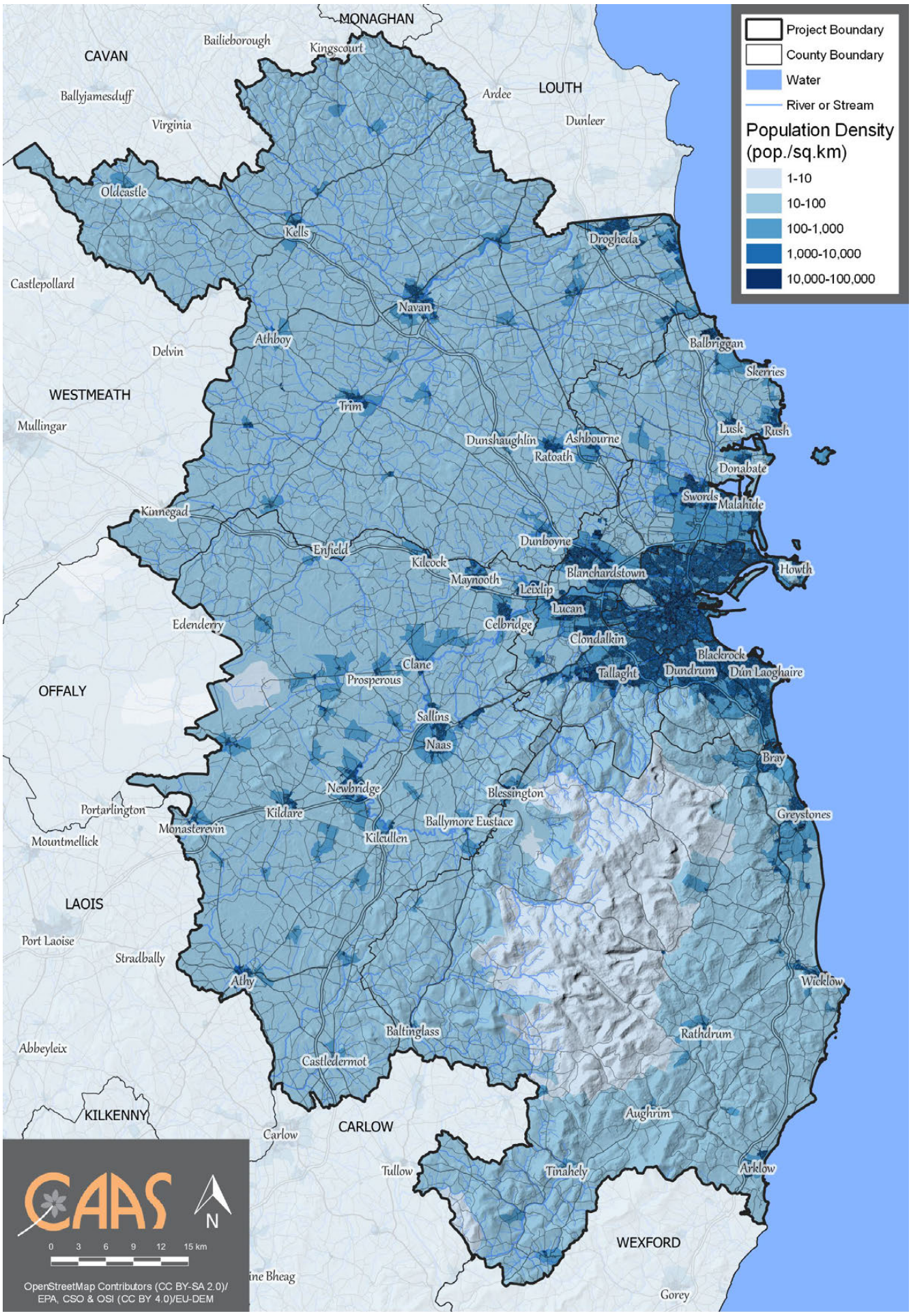

Figure 4.2 Population Density

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.

Areas containing the greatest extent of sensitive ecological features include areas associated with the coast, uplands, river and lakes.

The wider Dublin Bay area is among the most highly designated locations in the country for biodiversity. Despite its location surrounded by a city, Dublin Bay is an internationally significant wildlife and biosphere reserve, principally on account of wading birds that over-winter in the area, including internationally important numbers of light bellied brent geese and other species.

County Wicklow's sensitivities include peat bogs and forest areas, such as those found in the uplands and along the coastal, while County Kildare's sensitivities include peat bogs in the north-west parts of the County. Dispersed areas of marginal agricultural lands that may include ecological sensitivities generally occur in Counties Meath, Kildare and Wicklow.

Ecological designations include:

- Special Areas of Conservation (SACs)[12];
- Special Protection Areas (SPAs)[13];
- Natural Heritage Areas (NHAs)[14]
- Proposed Natural Heritage Areas (pNHAs)[15];
- Nature Reserves[16];
- Ramsar sites[17];
- National Parks[18];
- OSPAR sites[19];
- UNESCO World Heritage and UNESCO Biosphere sites[20];
- Certain entries to the Water Framework Directive Register of Protected Areas, including Shellfish Waters[21];
- Freshwater Pearl Mussel catchments[22];
- Salmonid Rivers identified by Regulations (S.I. 293 only)[23];
- Wildfowl Sanctuaries[24];
- Flora Protection Order sites[25]; and
- Tree Preservation Orders (TPOs)[26].

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

[12] 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 and listed in Appendix II.
[13] 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 listed in Appendix II.
[14] For more details refer to Section 4.7.2.2. Sites relevant to the Strategy area are mapped on Figure 4.5 and listed in Appendix II.
[15] For more detail refer to Section 4.7.2.2. Sites relevant to the Strategy area are mapped on Figure 4.5 and listed in Appendix II.
[16] For more detail refer to Section 4.7.2.7.
[17] For more detail refer to Section 4.7.2.7.
[18] For more detail refer to Section 4.6.2.6.
[19] OSPAR is the mechanism by which 15 Governments and the EU cooperate to protect the marine environment of the North-East Atlantic. **There are OSPAR sites within, partially within or adjacent to the Strategy area: Malahide Estuary MPA (O-IE-0002967); North Dublin Bay MPA (O-IE-0002968); and Dundalk Bay MPA (O-IE-0002971).**
[20] World Heritage Sites are landmarks or areas with legal protection by an international convention administered by the United Nations Educational, Scientific and Cultural Organization (UNESCO). World Heritage Sites are designated by UNESCO for having cultural, historical, scientific or other form of significance. For more details refer to Section 4.7.2.6 and Section 4.12.
[21] For more detail refer to Section 4.7.2.3 and Section 4.10.7.
[22] For more detail refer to 4.7.2.5.
[23] For more detail refer to 4.7.2.4.
[24] **There are seven Wildfowl Sanctuaries within, partially within or adjacent to the Strategy area: Brittas Ponds; North Bull Island; Rogerstown Estuary; Ballynafagh Lake (Blackwood Lake); Boyne Estuary (part); Broad Lough and Poulaphouca.**
[25] The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) gives legal protection to 65 species of bryophytes in the Republic of Ireland (25 liverworts and 40 mosses). **There are 41 locations within the Strategy area with a number of species protected by the Order.** For more detail refer to: https://dahg.maps.arcgis.com/.
[26] TPOs are a planning mechanism whereby individual trees or groups of trees can be identified as important and protected by a TPO. **There are a number of locations within the Strategy area with trees protected by the Order. For more detail refer to local authorities.**

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)[27];
- Watercourses, wetlands and peatlands;
- Other relevant County Development Plan designations;
- The EPA's Framework National Ecological Network for Ireland[28]; 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 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[29] 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 78 European sites (53 SACs and 25 SPAs) designated within this zone, out of which 59 European sites (40 SACs and 19 SPAs) are within the Strategy boundary (see all sites within this zone mapped on Figure 4.3 and listed in Appendix II).

Other European sites shown on Figure 4.4 include 12 additional sites (5 SACs and 7 SPAs) connected to the Strategy area via hydrological links but beyond the 15 km buffer.

The greatest extent of area designated within the Strategy area comprises the Wicklow Mountains. Lands at the coastal margins and coastal waters adjacent to the Strategy area are also designated. Other European sites designations within the Strategy area include river systems (e.g. the River Boyne and the

[27] 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.

[28] 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.

[29] All relevant European sites and their sensitive features are listed in the Appendix II of this report.

River Blackwater in County Meath and the River Barrow, the River Nore and the River Slaney in County Kildare) and patches of peatland areas (mainly in the western parts of County Kildare).

4.7.2.2 Natural Heritage Areas, 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.

There are 6 NHAs and 109 pNHAs designated within, partially within or adjacent to the Strategy area. These sites are mapped[30] on Figure 4.5 and listed in Appendix II of this report.

Areas likely to contain Annex I Habitats (mapped on Figure 4.9) 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:

- Surface waters listed on the European Communities (Quality of Salmonid) Regulations 1988 (S.I. 293) and intersecting surface and groundwaters (shown on Figure 4.6), including Rivers Dargle, Vartry, Slaney and Boyne; and
- Shellfish waters[31] (such as coastal and transitional waters and intersecting surface and groundwaters), including coastal areas at Malahide and Balbriggan/Skerries (shown on Figure 4.7).

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 Salmonid Waters

The Salmonid Regulations (S.I. 293/1988) designate the waters capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*) as protected. 34 (no.) rivers, tributaries and lakes are listed and protected under these Regulations that 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. Sections of the Rivers Dargle, Vartry, Slaney and Boyne (shown on Figure 4.6) are listed under the Regulations.

4.7.2.5 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*) and both are protected under Annex II and Annex V of the EU Habitats Directive. Within the Strategy area, the

[30] Sites within 15 km buffer from the Strategy area and beyond are also shown on Figure 4.5.

[31] 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.

Margaritifera Sensitive Areas are found within the following river catchments (Figure 4.8):

- Avoca - Lower Avonmore (Catchments with previous records of Margaritifera, but current status unknown);
- Avoca - Upper Avonmore (Catchments of other extant populations);
- Avoca - Aughrim (Catchments of other extant populations);
- Liffey – Kings (Catchments of other extant populations);
- Barrow (Catchments with previous records of Margaritifera, but current status unknown);
- Slaney Upper (Catchments of other extant populations);
- Slaney – Dereen (Catchments of SAC populations listed in S.I. 296 of 2009); and
- Vartry (Catchments with previous records of Margaritifera, but current status unknown).

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.

4.7.2.6 UNESCO Biosphere Designation

The Strategy area is located within the Dublin Bay United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve. North Bull Island was designated as a Biosphere Reserve in 1981 because of its rare and internationally important habitats and wildlife and the designation was extended to the wider Dublin Bay in 2015, reflecting the Bay's significant environmental, economic, cultural and tourism importance, and extends to over 300 km^2. Over 300,000 people live within the Biosphere.

The Transition Zone of the Biosphere (this zone comprises 173 km^2 and forms the outer part of the Biosphere, including residential areas, harbours, ports and industrial and commercial areas) is adjacent to areas that are part of both the Core Zone (this zone comprises 50 km^2 of areas of high natural value with key areas including the Tolka and Baldoyle Estuaries, Booterstown Marsh, Howth Head, North Bull Island, Dalkey Island and Ireland's Eye) and the Buffer Zone, which comprises 82 km^2 of public and private green spaces such as parks, greenbelts and golf courses, which surround and adjoin the core zones.

4.7.2.7 Other designations

Other relevant designations within the Strategy area (mapped on Figure 4.9) include a National Park, Nature Reserves and Ramsar sites.

National Parks have the following characteristics:

- Where one or several ecosystems are not materially altered by human exploitation and occupation; where plant and animal species, geomorphological sites and habitats are of special scientific, educational and recreational interest or which contain a natural landscape of great beauty;
- Where steps have been taken by the Government to prevent or eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which have led to its establishment; and
- Where visitors are allowed to enter, under special conditions, for inspirational, educational, cultural and recreational purposes.

There are six National Parks in Ireland, including the Wicklow Mountains National Park, occupying central and northern parts of County Wicklow.

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. There are ten State owned Nature Reserves located within the Strategy area (mapped on Figure 4.9)

- **Rogerstown Estuary Nature Reserve** (in County Dublin);
- **Baldoyle Estuary Nature Reserve** (in County Dublin);
- **North Bull Island Nature Reserve** (in County Dublin);
- **Knocksink Wood Nature Reserve** (in County Wicklow);
- **Glen of the Downs Nature Reserve** (in County Wicklow);
- **Deputy's Pass Nature Reserve** (in County Wicklow);
- **Vale of Clara Nature Reserve** (in County Wicklow);
- **Glendalough Nature Reserve** (in County Wicklow);
- **Glenealo Valley Nature Reserve** (in County Wicklow); and
- **Pollardstown Fen** (in County Kildare).

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. This entails the commitment of each contracting state to a policy of protection and management of the designated wetlands, and of formulating and implementing planning so as to promote the conservation of designated wetlands and, as far as possible, the wise use of wetlands in its territory. Ireland presently has 45 sites designated as Wetlands of International Importance, with surface areas of 66,994 hectares. There are six Ramsar sites designated within the Strategy area (mapped on Figure 4.9), including:

- **Rogerstown Estuary Ramsar site** (in County Dublin);
- **Baldoyle Bay Estuary Ramsar site** (in County Dublin);
- **Broadmeadow Estuary Ramsar site** (in County Dublin);
- **North Bull Island Ramsar site** (in County Dublin);
- **Sandymount Strand/Tolka Estuary Ramsar site** (in County Dublin); and
- **Pollardstown Fen Ramsar site** (in County Kildare).

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

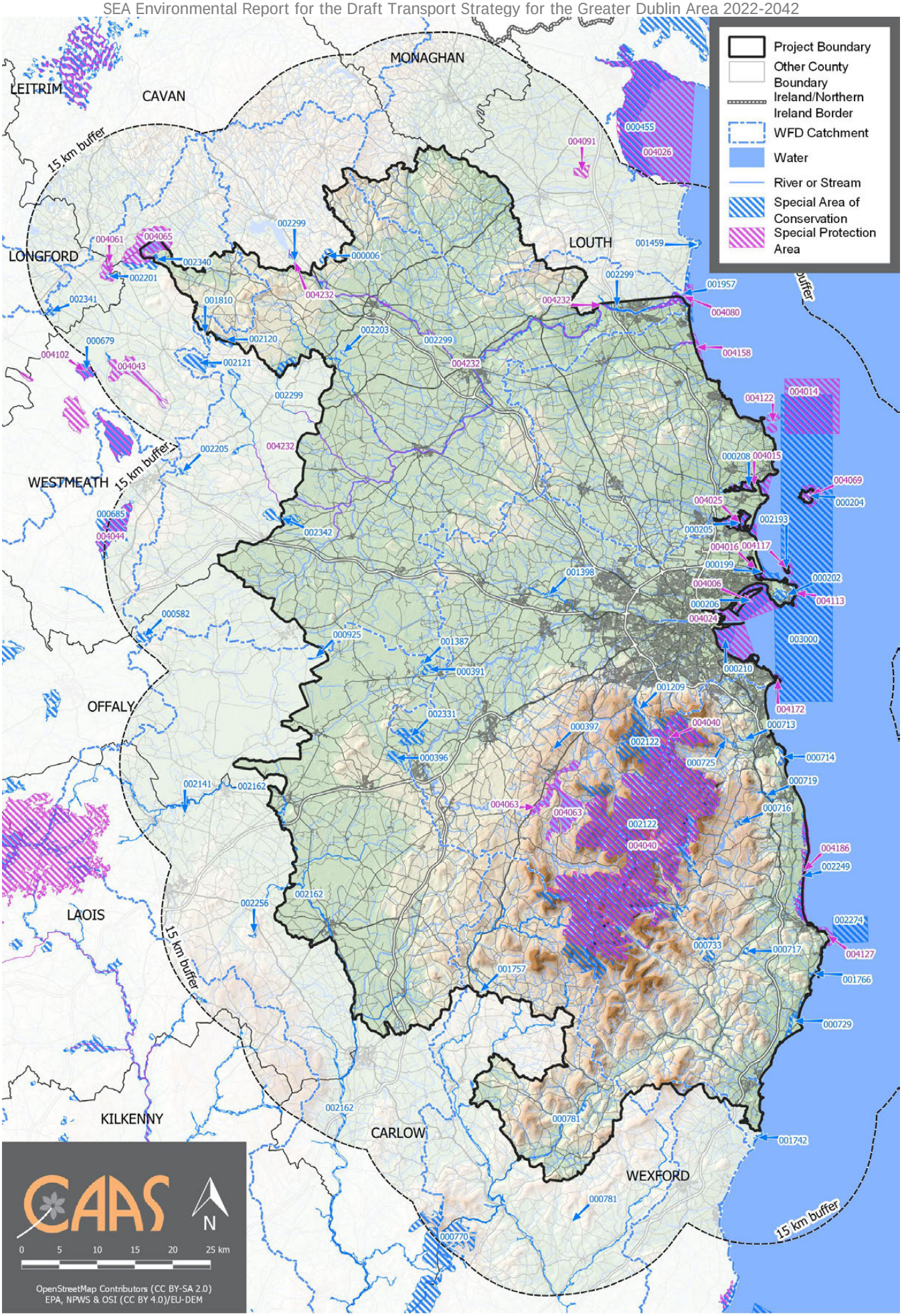

Figure 4.3 European sites within and within 15 km of the Strategy area

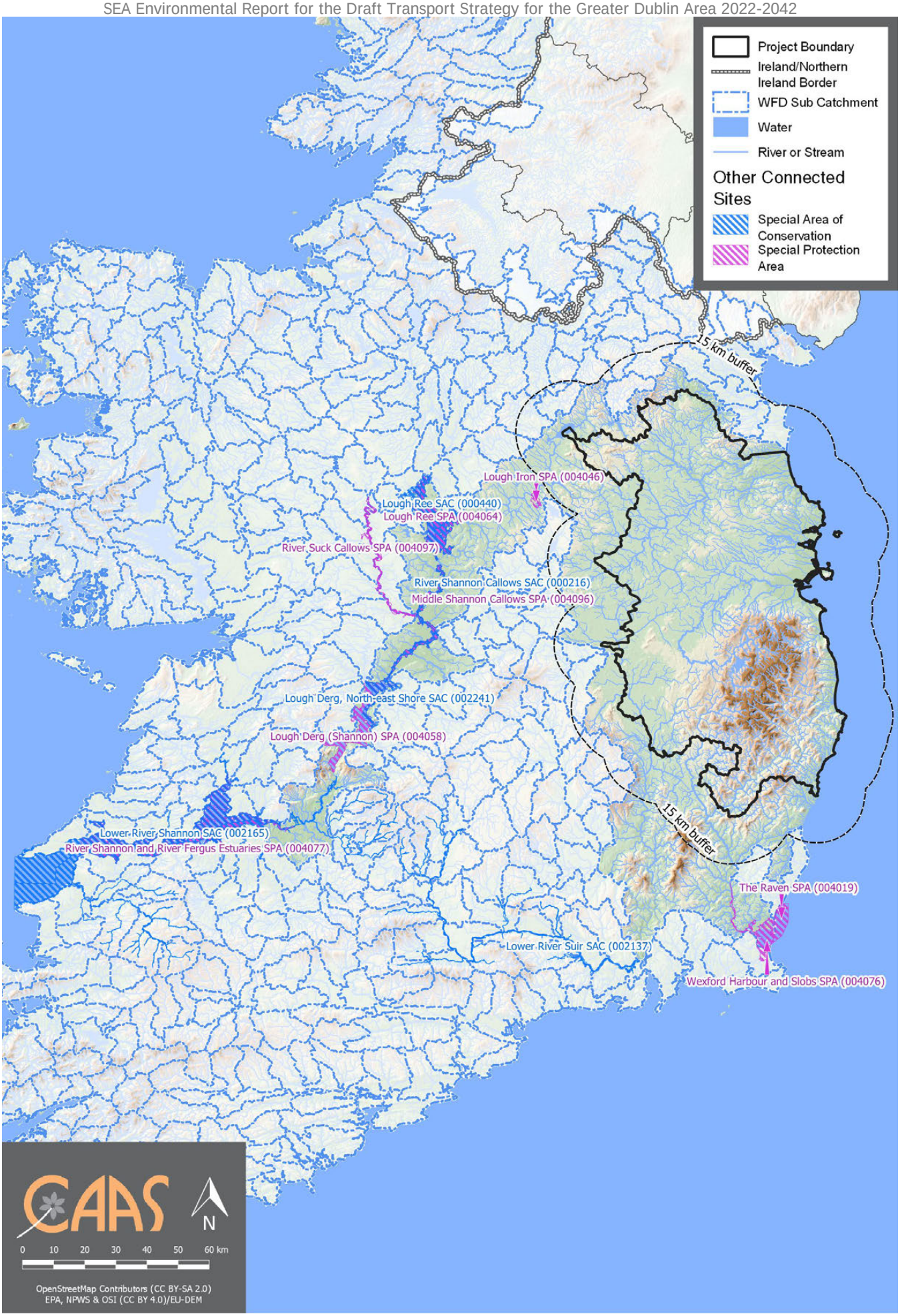

Figure 4.4 Other connected European sites beyond 15 km of the Strategy area

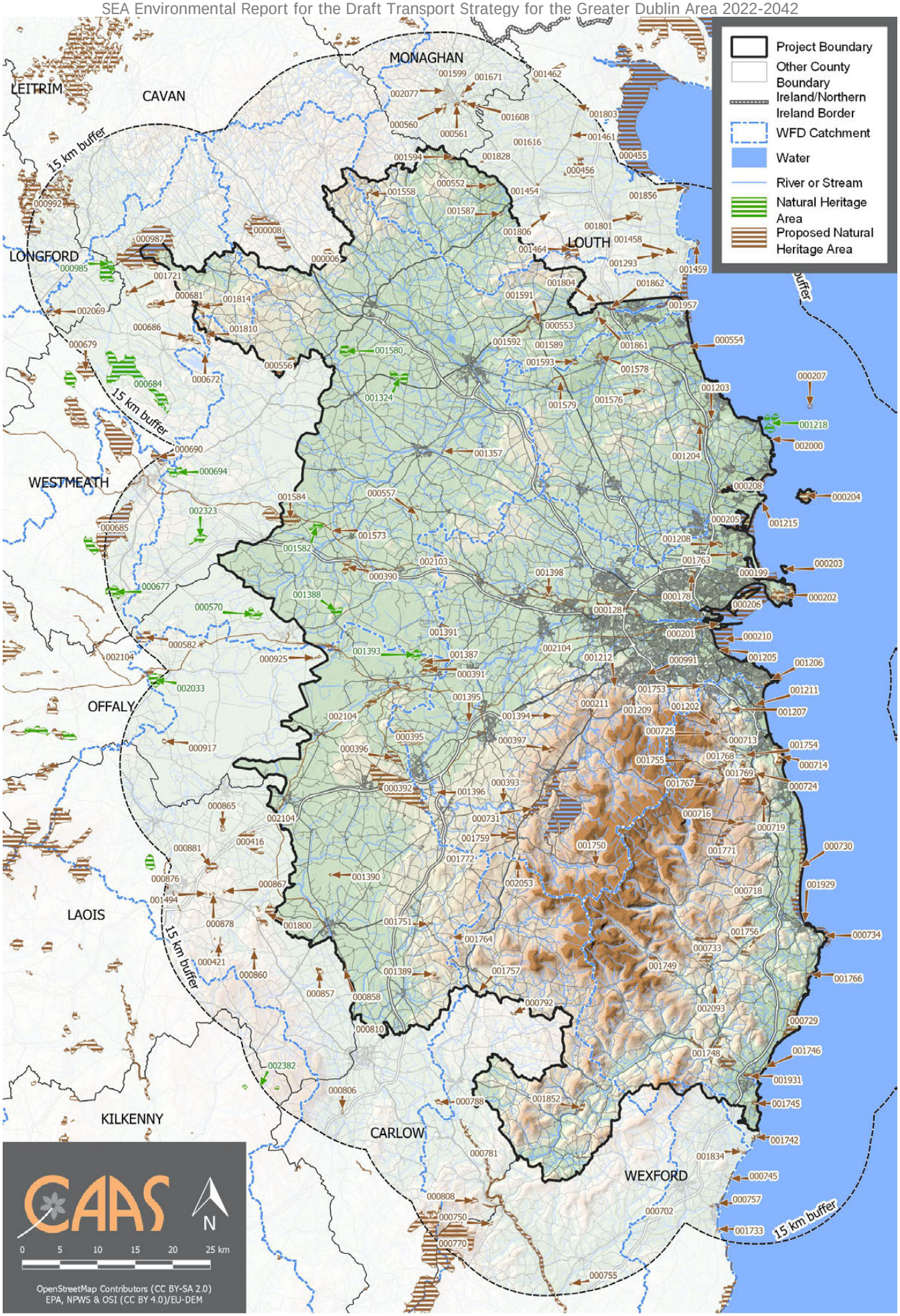

Figure 4.5 Natural Heritage Areas and Proposed Natural Heritage Areas

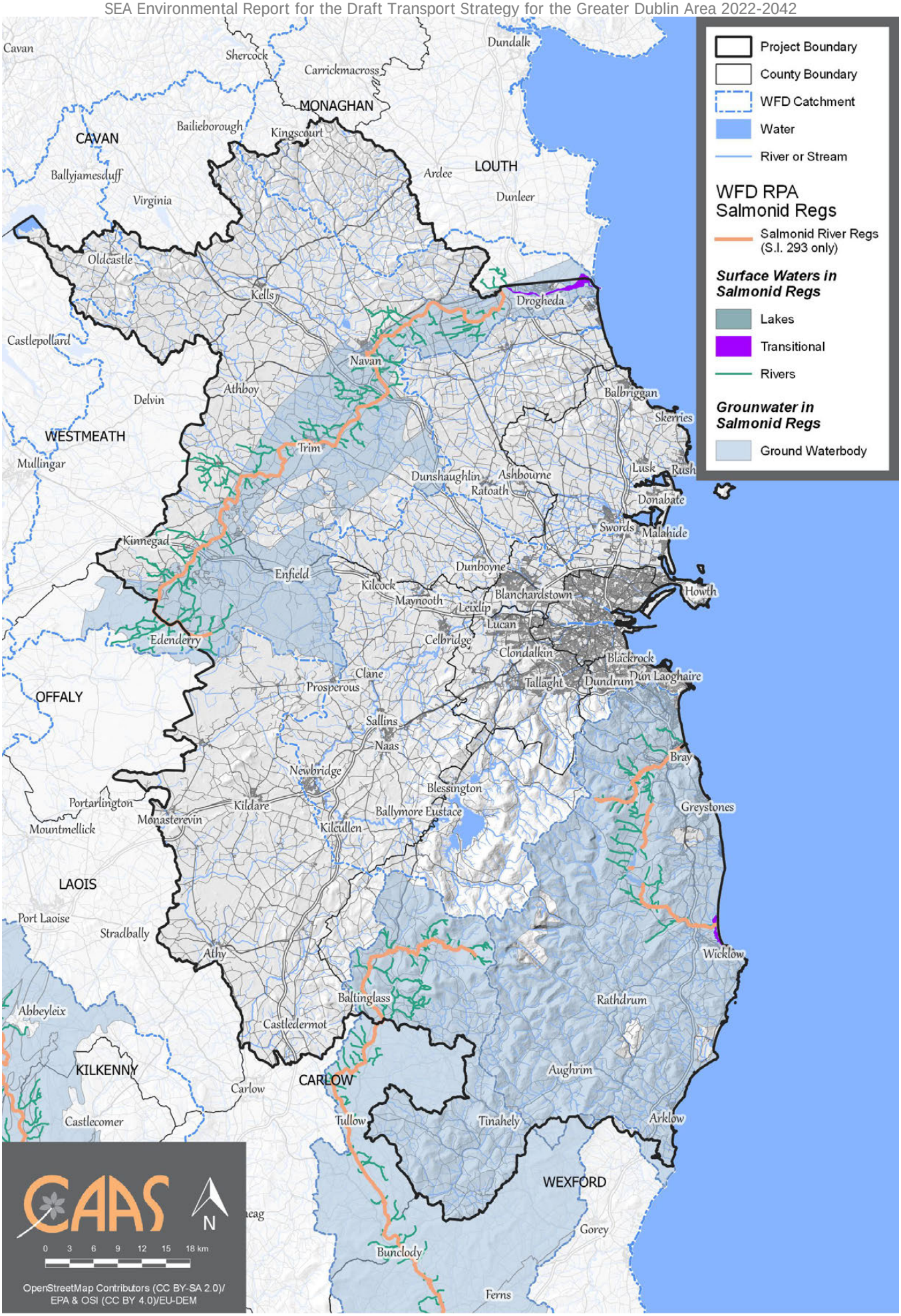

Figure 4.6 WFD RPA Salmonid Waters

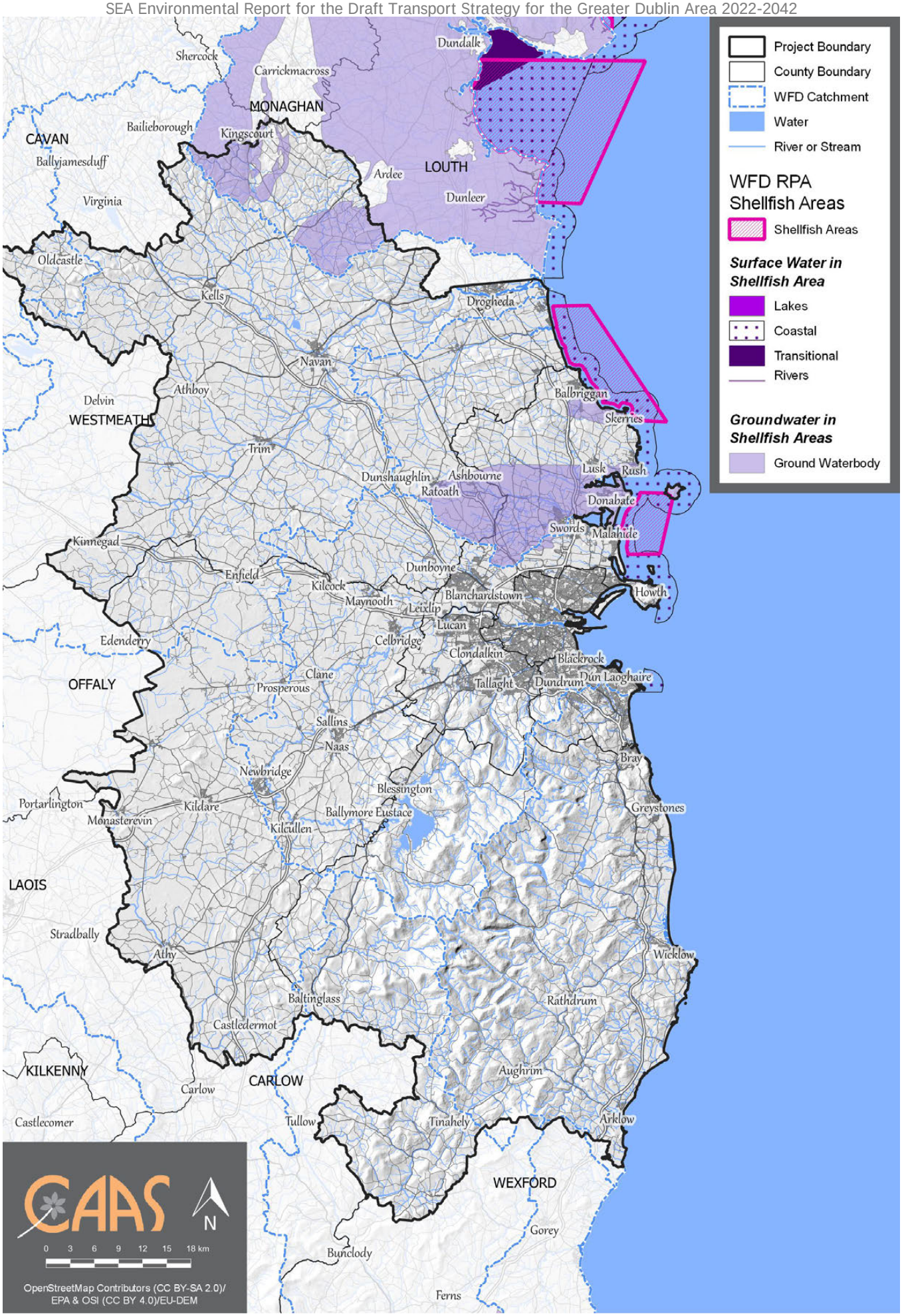

Figure 4.7 WFD RPA Shellfish Areas

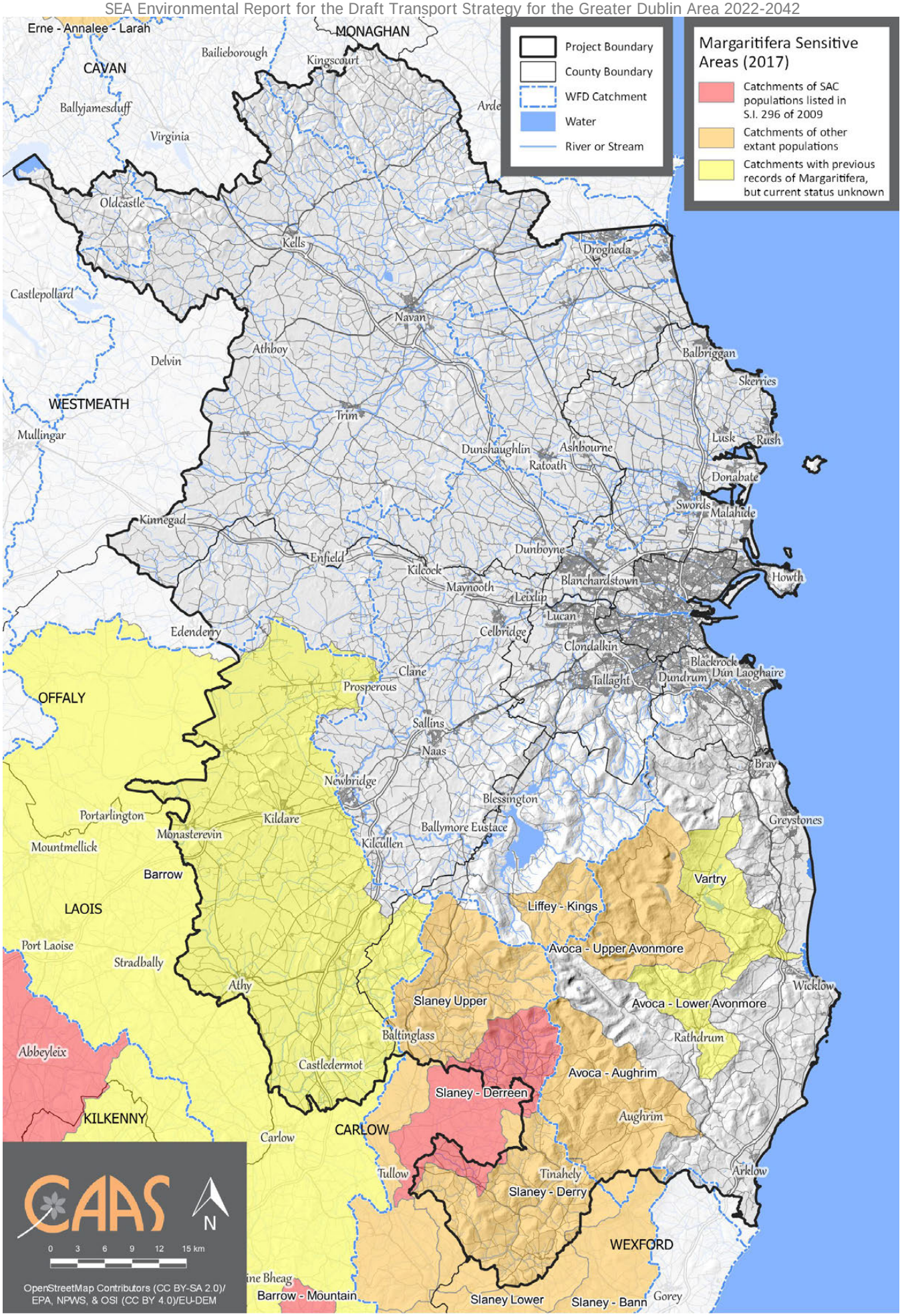

Figure 4.8 Margaritifera Sensitive Areas

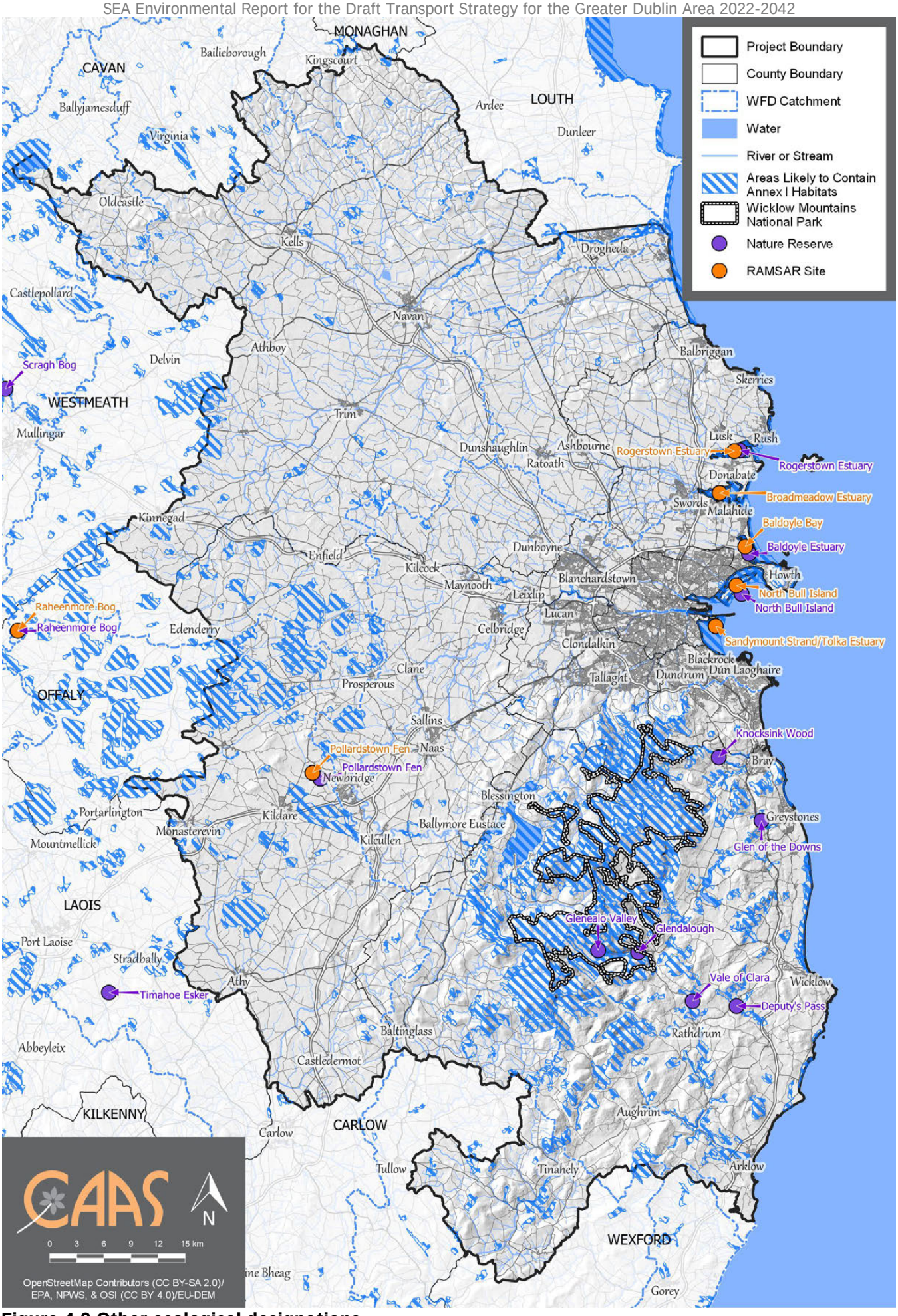

Figure 4.9 Other ecological designations

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 following are the outcomes of implementing the current 2016-2035 Strategy to date:

- The share of people travelling in to Dublin City Centre by sustainable modes in the morning peak period has increased from 66% in 2015 to 72% in 2019;
- The number of cars entering the city centre between 7 am and 10 am has fallen from 65,000 in 2015 to 58,000 in 2019, while the total person trips has increased from under 200,000 to 217,000 over the same period.
- The total passengers carried daily by Irish Rail services in the Dublin region rose from 28 million in 2015 to over 35 million in 2019, with its peak hour mode share also growing.
- The total passengers carried by Metropolitan bus services annually in Dublin grew from 120 million in 2015 to 153 million in 2019.
- The total passengers carried by Luas grew from 35 million in 2015 to 48 million in 2019.
- The 2019 Customer Satisfaction Survey carried out on behalf of the NTA showed 87% of public transport users to be satisfied with their public transport services.

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

An extent of the Strategy area is covered by forestry, the highest concentration of which is within County Wicklow. 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 in upland areas and in west Kildare, are often indicative of areas that are the most sensitive to development due to ecological sensitivities and impeded drainage issues; various peatland areas are subject to ecological designations.

4.8.8 Coastline

Management of the Strategy area's coastline and coastal erosion are topics with relevance to various environmental components. Coastlines 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. Many of the Strategy areas settlements have developed along or near the coast.

In 2013, the OPW completed the Irish Coastal Protection Strategy Study which provides a strategic assessment of the extent of coastal erosion and coastal flooding along the south-east coastline.

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

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.

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, there is currently an EU Thematic Strategy on the protection of soil which includes a proposal for a Soil Framework Directive which proposes common principles for protecting soils across the EU.

Active blanket bogs and active raised bogs are considered to be priority habitats, listed on 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. Peatland areas within the Strategy area are found mainly within Counties Kildare and Wicklow. Many 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' (CGS), 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 CGS until such time that the most significant sites can be designated as geological NHAs.

Nationally, audits of geological sites in 19 counties have been completed to date, including Dublin, Wicklow, Kildare and Meath. Concentrations of these designations within the Strategy area can be found in the upland areas and along the coast. County Geological Sites[32] are mapped on Figure 4.10 listed in Appendix II.

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.

The Strategy area has numerous locations with a history of landslide events[33] (shown on Figure 4.11). Many of these events are associated with the coastal, upland and peatland areas.

The GSI have identified that most of the Strategy area has relatively low levels of landslide susceptibility, with moderate to high susceptibility found in upland and some coastal areas, mainly within County Wicklow and southern parts of County Dublin (mapped on Figure 4.11).

4.9.3 Existing Problems

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

[32] Relevant County Geological Sites in the neighbouring counties, beyond the Strategy area have been also considered by the assessment.

[33] 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.

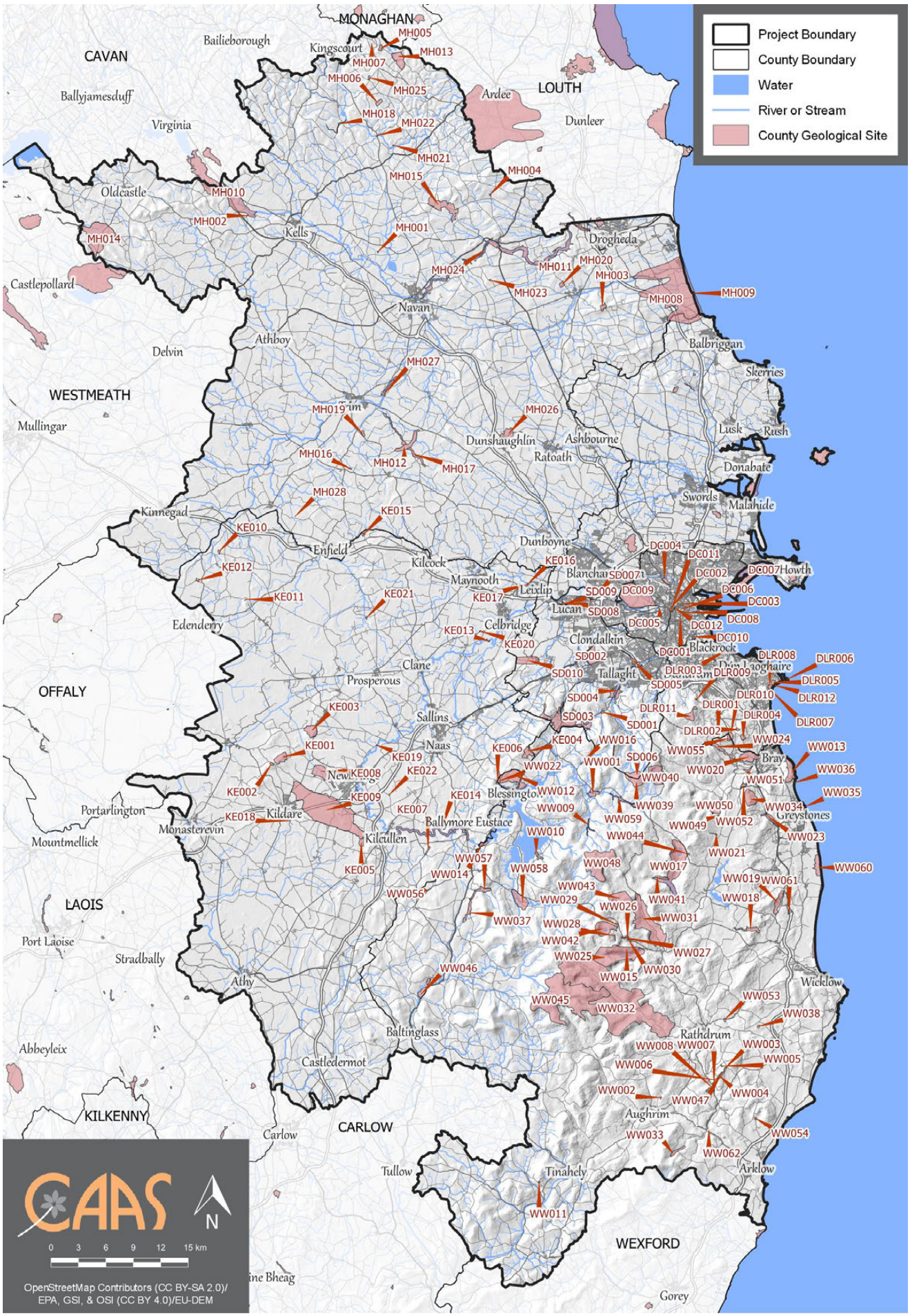

Figure 4.10 County Geological Sites

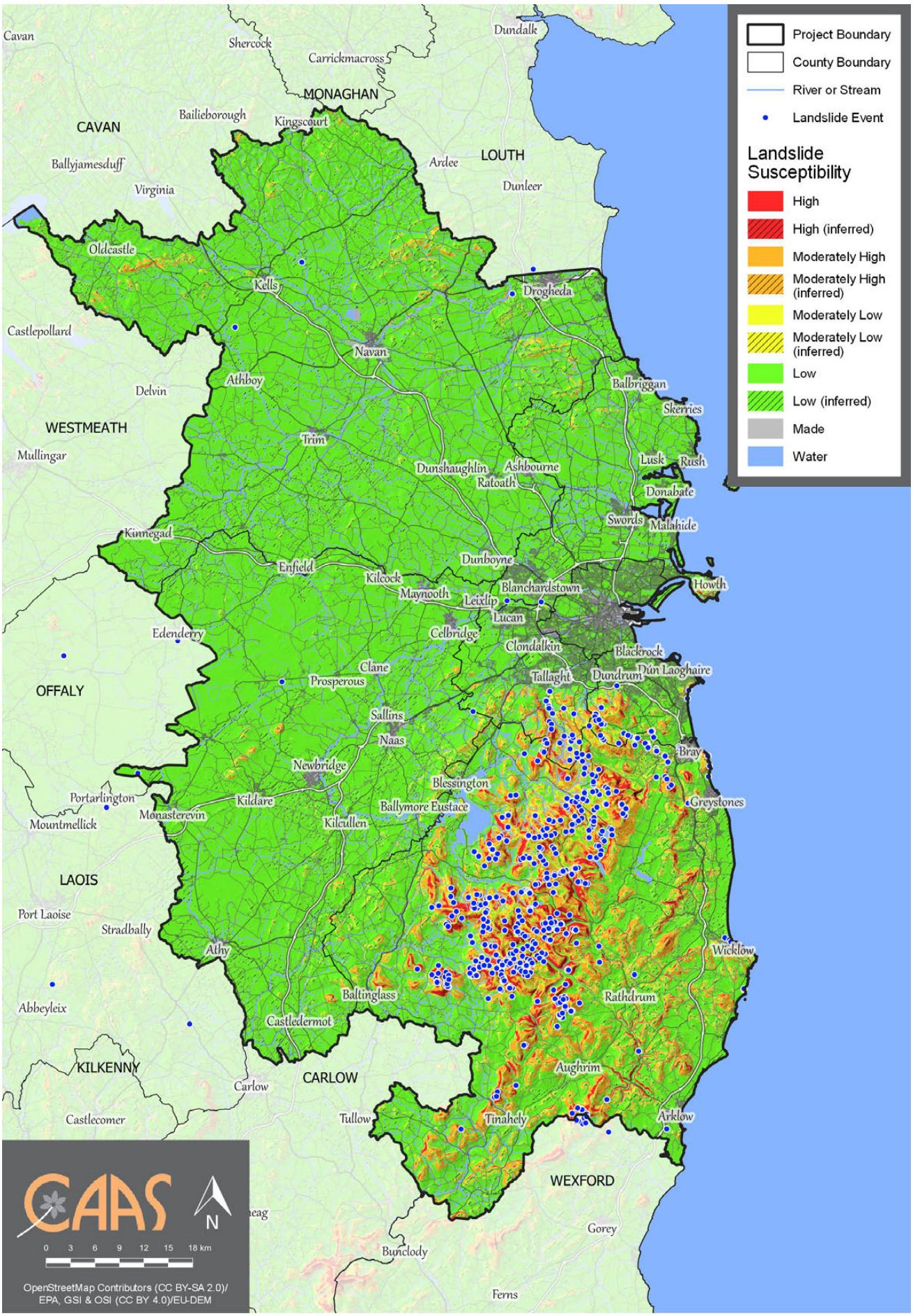

Figure 4.11 Landslide susceptibility

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: Liffey and Dublin Bay; Nanny-Delvin; Boyne; Barrow; Slaney and Wexford Harbour; and Avoca-Vartry.

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 Water Framework Directive (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, lakes, coastal and transitional waters within and surrounding the Strategy area is shown on Figure 4.12 and detailed in Appendix II.

The WFD status of most of the rivers and lakes within the Strategy area is classified as *moderate*, *good* and *high*, however some

sections[34] of rivers and lakes are identified as *bad* and *poor* due to unsatisfactory ecological/biological and/or physio-chemical status.

The WFD surface water status (2013-2018) of coastal and transitional waterbodies within and surrounding the Strategy area is identified as *moderate, good* and *high,* however Rogerstown Estuary is identified as *bad* and Boradmeadow Water 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 identified[35] 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 in Appendix II. 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.
- **Extractive industry related pressures** – can include different activities that lead to the extraction of raw materials from the earth, such as oil, metals, mineral and aggregates. Impacts from extractive sites include sediment/siltation pollution and alteration to the physical environment.
- **Forestry pressures** - can include poorly managed and inappropriately sited forest operations, negatively impact on water quality and aquatic habitats and species. The most common water quality problems arising from forestry relate to the release of sediment and nutrients and the impacts from acidification. Forestry may also give rise to changes in stream flow regimes caused by associated land drainage.
- **Domestic wastewater pressures** – can include septic-tank systems associated with one-off housing and small unlicensed private urban waste-water treatment plants. If not correctly installed and well maintained, these systems can result in leakage of untreated effluent to waters.
- **Other pressures** can include impacts from activities such as **historically polluted sites** and **aquaculture.** These activities each impact a relatively small number of water bodies so they have been grouped together.

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 4.13) is mostly identified as being of *good* status, with some areas of *poor* status, including areas underlying Avoca Historic Mine, Glendalough Historic Mine, Glenmalure Historic Mine, Waste Facility (W0014-01) and a number of Industrial Facilities (P0014-03;

[34] As per EPA classification system (gis.epa.ie/EPAMaps)
[35] EPA (2019): Report on Water Quality in Ireland 2013-2018

P0019-02; P0325-01; P0480-02; and P0784-01).

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;*
- *High and moderate;* and
- *Extreme vulnerability* and *extreme (rock at or near surface or karst)* mainly in the and along the coastal and upland areas.

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*;
- *Poor aquifer bedrock which is generally unproductive*;
- *Regionally important gravel aquifer;*
- *Locally important gravel aquifer;*
- *Locally important aquifer bedrock which is moderately productive only in local zones*;
- *Locally important aquifer bedrock which is generally moderately productive*; and
- *Locally important aquifer karstified*.

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 Groundwater[36] in Nutrient Sensitive Areas[37] (mapped on Figure 4.16);
- Drinking Water Surface Water Bodies[38] (mapped on Figure 4.17). Groundwater beneath the entire Strategy area is also included; and
- Bathing Water Areas[39] including surface waters and groundwater in bathing areas (mapped on Figure 4.18).

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 Bathing Waters

There are 24 bathing locations (shown on Figure 4.12) identified as ‘Bathing Waters’ under the Bathing Water Regulations 2008, as amended.

For bathing waters, Mandatory and Guide Values are set out for bathing waters in the 2006 EU Bathing Water Directive and transposing Regulations. Mandatory Values are values that must be observed if the bathing area is to be deemed compliant with the Directive. Compliance with Guide Values exceeds guidance with Mandatory Values and can be regarded as quality objectives which bathing sites should endeavour to achieve.

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.

[36] Groundwater bodies that intersect with areas designated as sensitive.

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

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

[39] Bathing Waters are designated under the Bathing Water Quality Regulations 2008 S.I. No. 79 of 2008, as amended.

The most recent available data from the EPA for 2020[40] shows that 24 locations of designated bathing waters along the Greater Dublin Area's coastline are either classified as *excellent*[41] (at: Laytown/Bettystown; Rush South Beach; Donabate/Balcarrick Beach; Portmarnock/Velvet Strand; Sutton/Burrow Beach; Seapoint; Forty Foot Bathing Place; White Rock Beach; Killiney; Bray South Promenade; Greystones South; Brittas Bay North; Brittas Bay South; and Clogga) or *good*[42] (at: Skerries South Beach; Rush North Beach; Dollymount Strand; Sandycove Beach; Portrane/the Brook Beach; and Silver Strand). Bathing waters at Balbriggan/Front Strand Beach are classified as *poor* and bathing waters at Loughshinny Beach, Claremont Beach and Sandymount Strand are classified as *sufficient.*

Figure 4.18 also shows Bathing Water Areas. Identification and description of Bathing Water Areas with designated Bathing Water Locations exist for the EU Water Framework Directive.

The Blue Flag award is given to beaches and marinas that have excellent water quality and maintain other standards including effective and appropriate management to ensure the protection of the natural environment and safety standards. The bathing locations within the Greater Dublin Area, including Portmarnock/Velvet Strand, Seapoint, Bray South Promenade, Greystones, Brittas Bay North and Brittas Bay South were awarded with the Blue Flag in 2021.

4.10.9 Groundwater Source Protection Areas

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 a number of Source Protection Areas located within/partially within the Strategy area (mapped on Figure 4.19 alongside groundwater vulnerability classifications), including:

Public Supply Source Protection Areas:

- Athboy
- Athy
- Ballivor
- Ballymakenny
- Baltinglass
- Blessington
- Bog of the Ring
- Castlemitchell/Churchtown
- Curragh
- Curragha
- Drybridge
- Dunboyne
- Dunshaughlin
- Edenderry
- Enfield
- Johnstown
- Kilkea
- Kilteel
- Kiltrough
- Kingscourt/Descart
- Kingscourt/Mullantra
- Lipstown/Narraghmore
- Longwood
- Monastervin
- Nobber
- Rathangan
- Redcross
- Roberstown
- Roundwood
- Slane
- Trim
- Gromanstown

Group Scheme Preliminary Source Protection Areas:

- Bracknagh
- Ballyroe
- Meath Hill
- Askanagap
- Blakestown/Brittonstown
- Ballingate
- Ballyfolan
- Kitale
- Ballindoolin
- Cornagower
- Baltyboys
- Blainroe

4.10.10 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.

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

[40] EPA Report (2021) on *Bathing Water Quality in Ireland for the year 2020*
[41] The highest, cleanest class
[42] The second highest, second cleanest class

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 4.1.

Table 4.1 Water Sensitivity Layers and Weighting

Layer	Weight
WFD River, Coastal, Lake and Transitional Waters Status	Moderate or Unassigned (5); Poor (10); Bad (15).
WFD Groundwater of Poor Status	10
GSI Groundwater Vulnerability Extreme or Karst	10
GSI Groundwater Vulnerability High	5
WFD RPA Entries for Drinking Water (surface and ground), Bathing Waters, Shellfish Waters, Salmonid Rivers and Nutrient Sensitive Areas	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.

Rivers throughout the region show up as being sensitive. Heightened sensitivities arising from groundwater data are found in much of County Wicklow, north-west and east Meath, Dublin County and central Kildare. Sensitivity is also attached to coastal and upland areas.

4.10.11 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.

4.10.12 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.

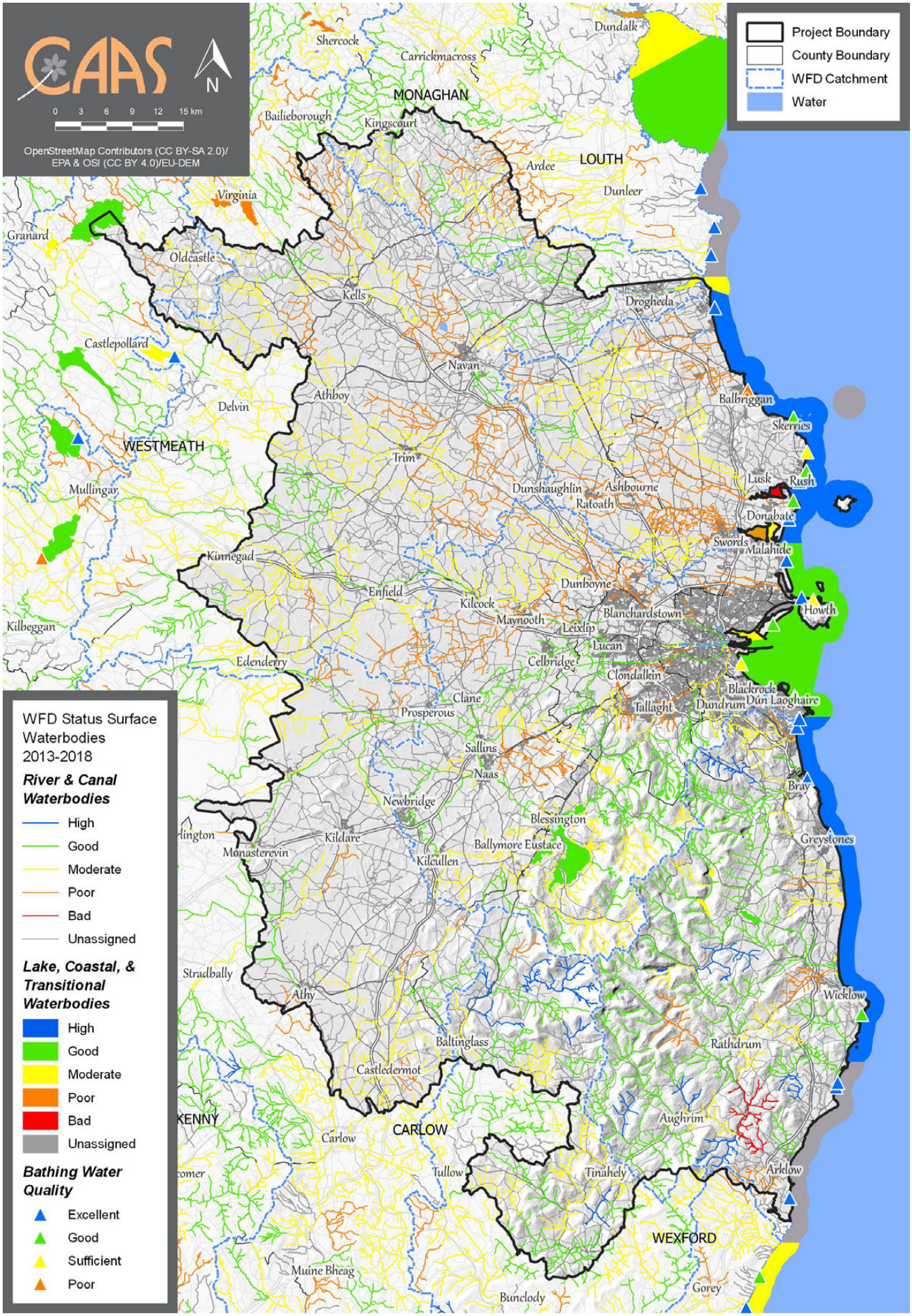

Figure 4.12 WFD Surface Water Status (2013-2018)

Figure 4.13 WFD Groundwater Status (2013-2018)

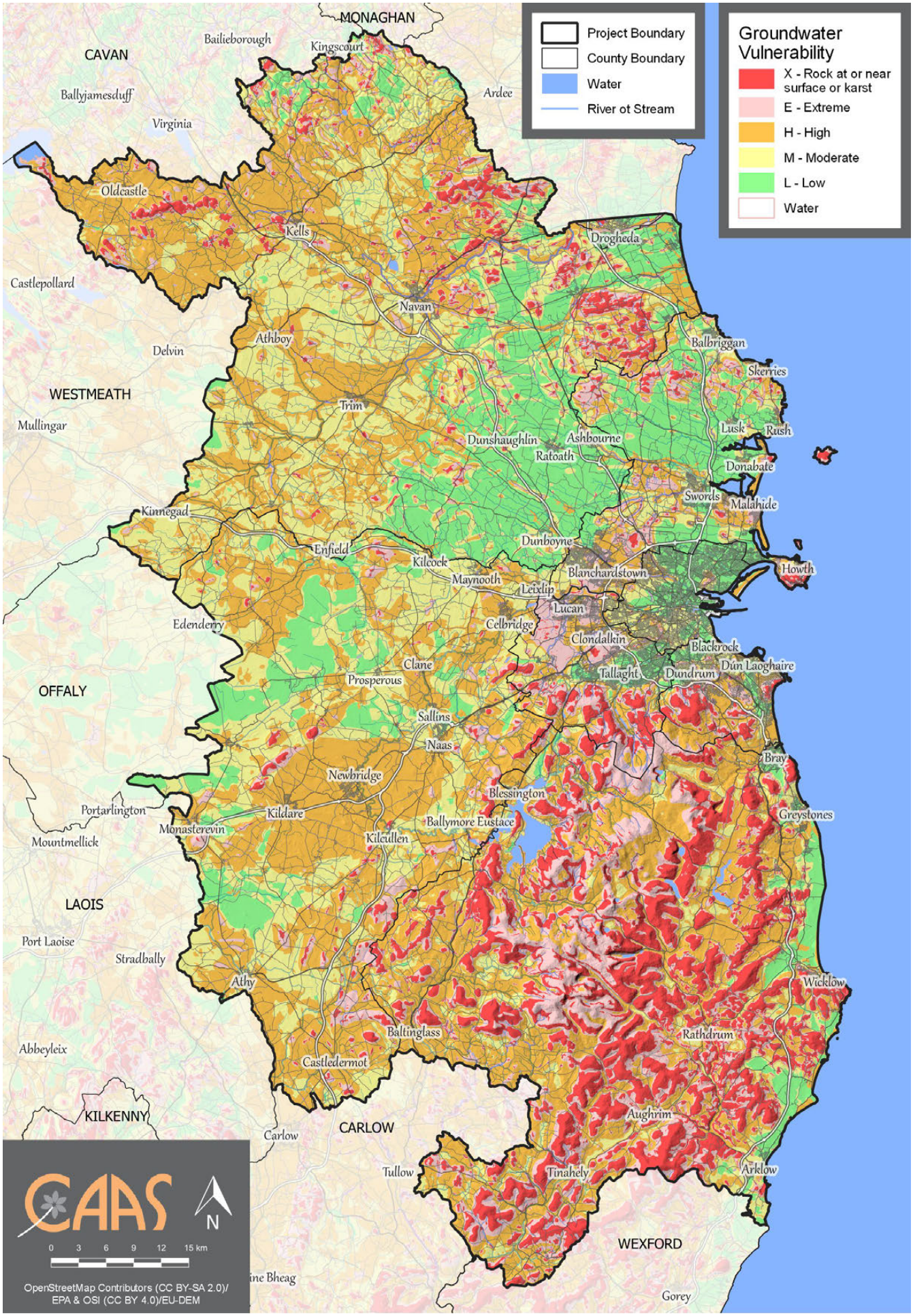

Figure 4.14 Groundwater Vulnerability

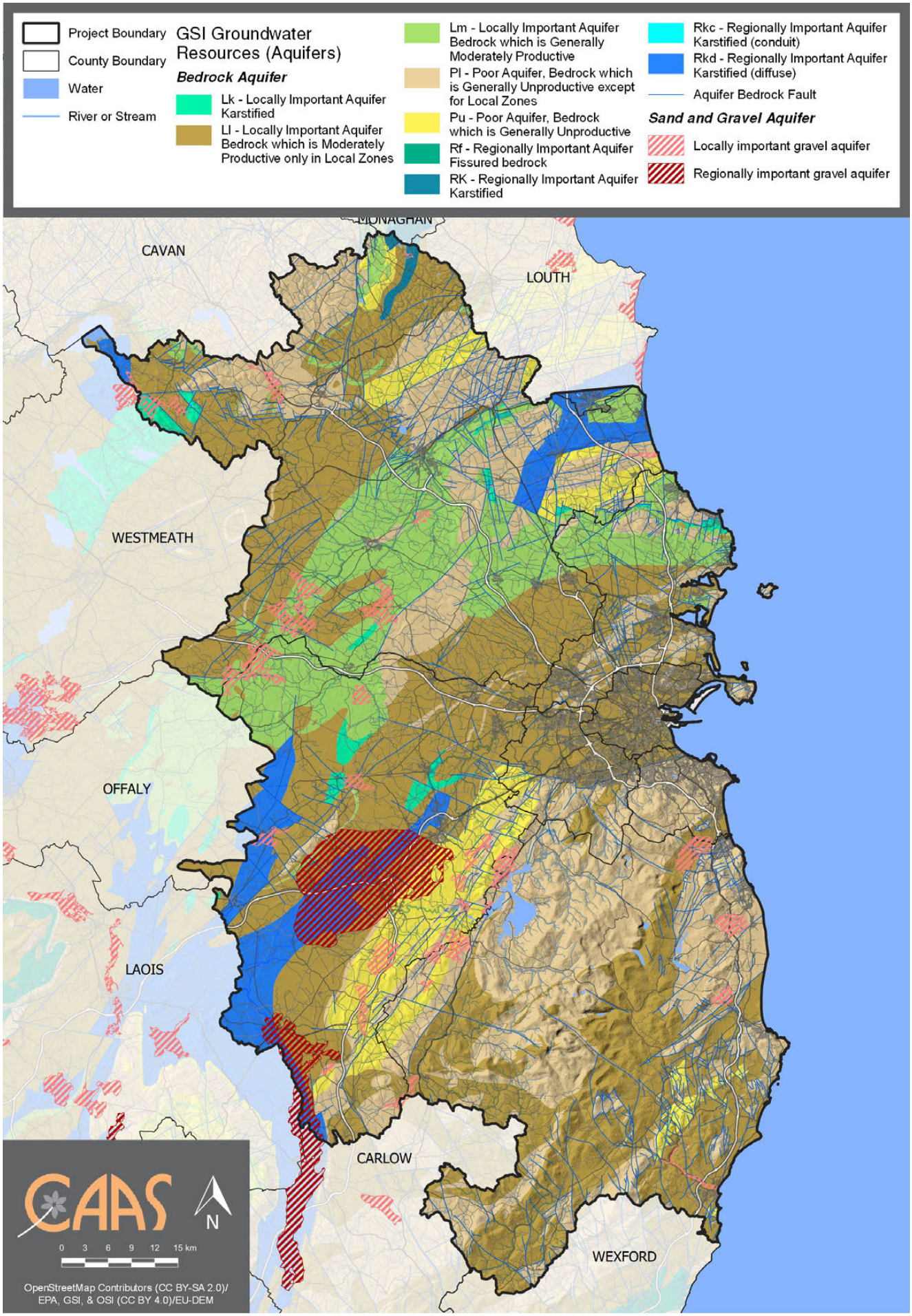

Figure 4.15 Groundwater Productivity

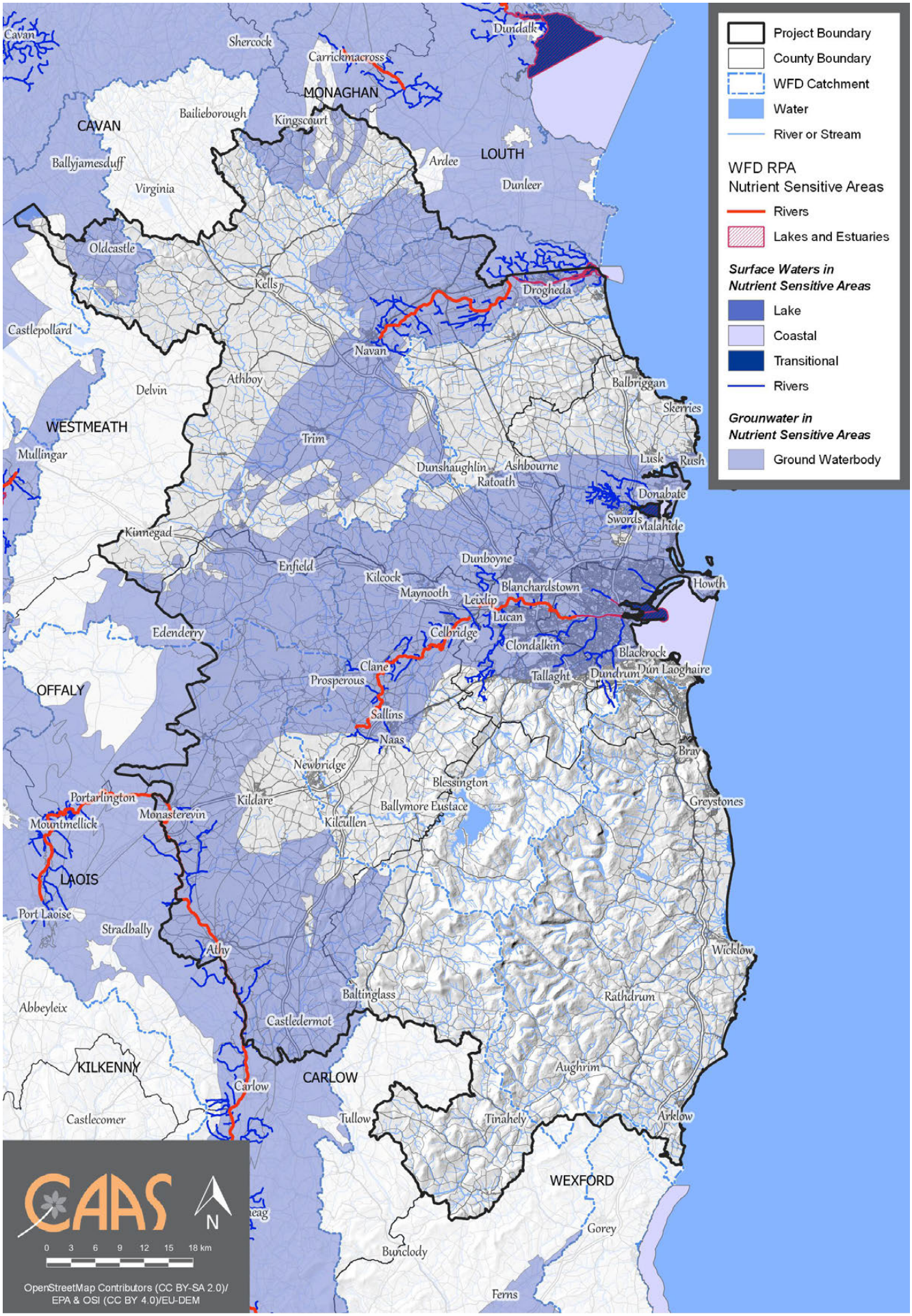

Figure 4.16 WFD RPA Nutrient Sensitive Areas

Figure 4.17 WFD RPA Drinking Water

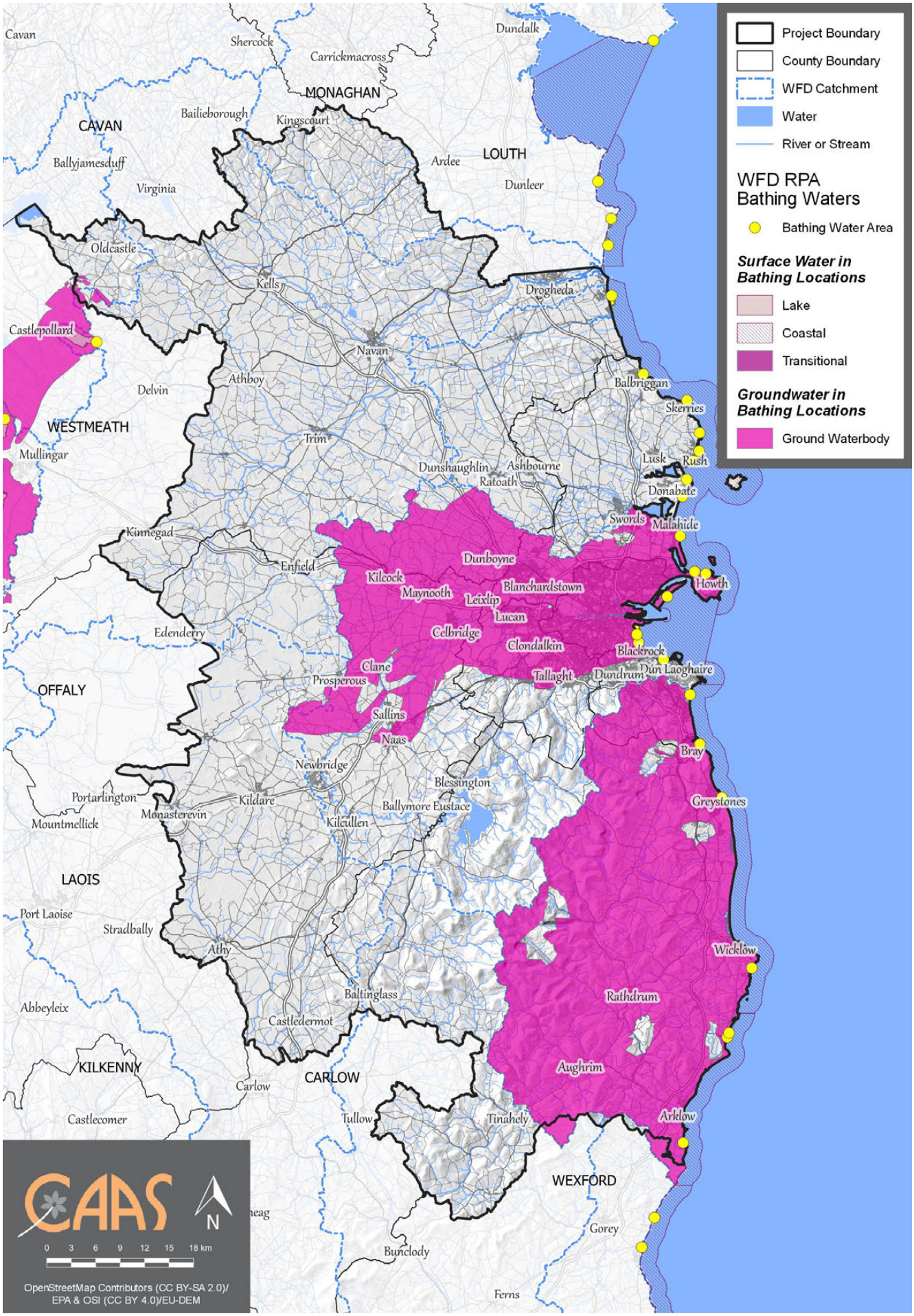

Figure 4.18 WFD RPA Bathing Waters

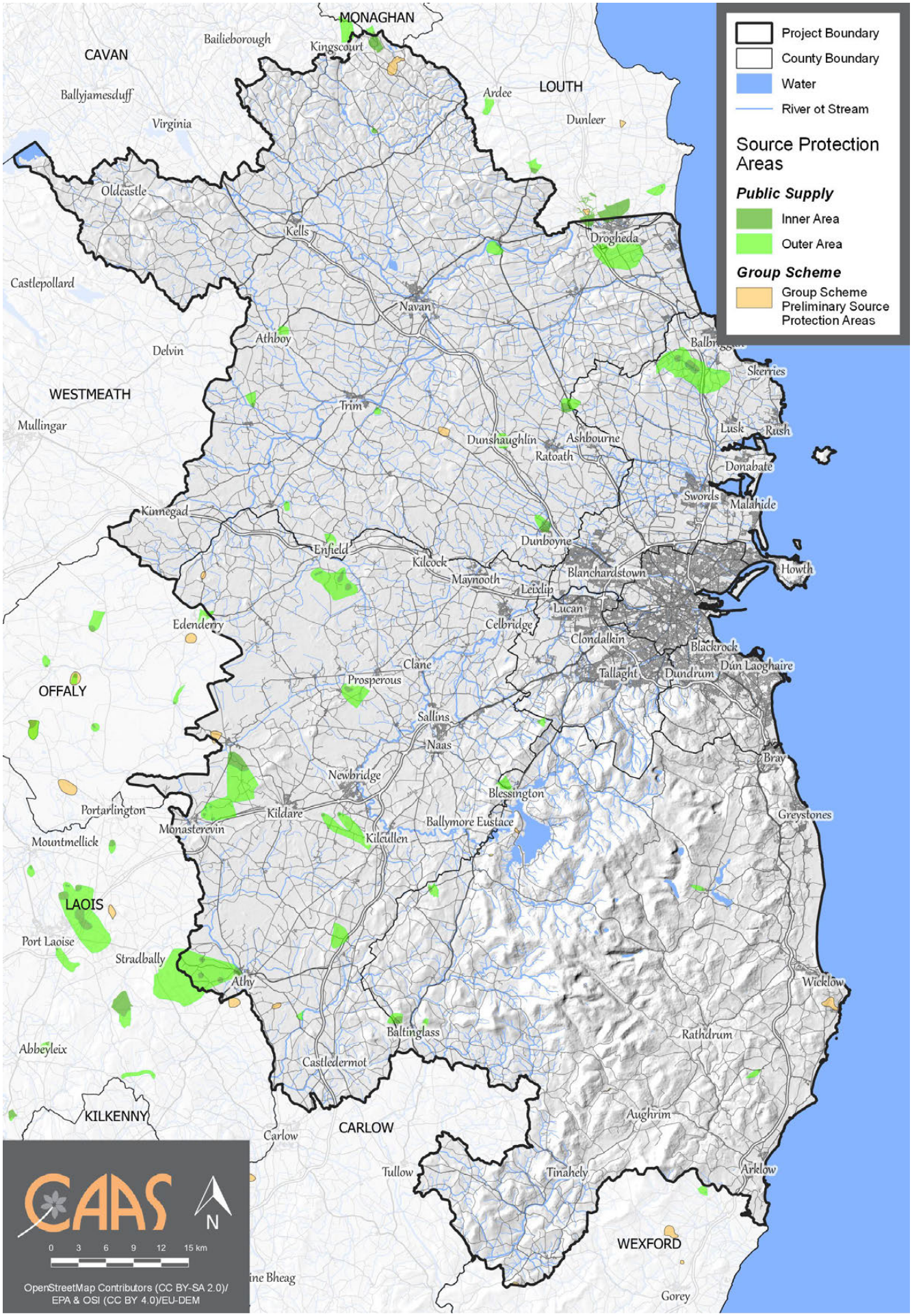

Figure 4.19 Source Protection Areas

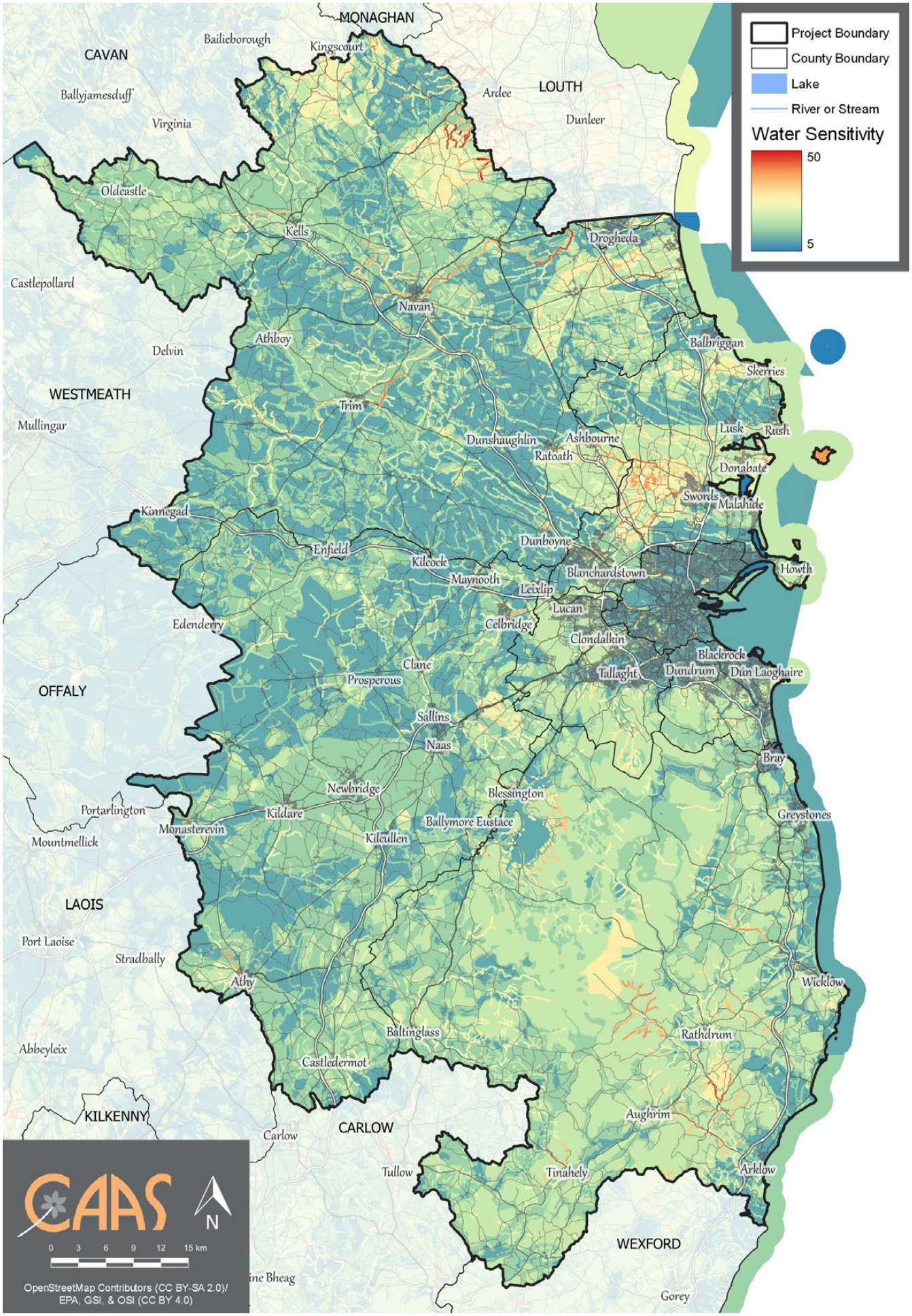

Figure 4.20 Potential Water Sensitivity

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, seascapes 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 Dublin, Meath, Kildare and Wicklow 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.

In addition to the aforementioned landscape designations, planning authorities are empowered (under section 202 of the Planning and Development Act 2000), to make a Special Amenity Area Order for reasons of outstanding natural beauty or an area's special recreational value and having regard to any benefits for nature conservation. The purpose of these Orders is to preserve/enhance landscape character and to prevent/limit development. Such areas should also be taken into account by lower tier planning and environmental assessments where/if relevant. There are four SAAOs in the Strategy area, three in County Dublin (North Bull Island, Howth Head and Liffey Valley) and one in County Wicklow (Bray Head).

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 on Figure 4.21 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 much of County Meath, County Kildare, County Wicklow and Dublin County. Robust landcover is found within and surrounding the M50 motorway and in pockets throughout the Strategy area. Sensitive landcover are most common in the Wicklow Mountain uplands/foothills, in bog areas in north-west Kildare and in coastal areas and parklands.

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.

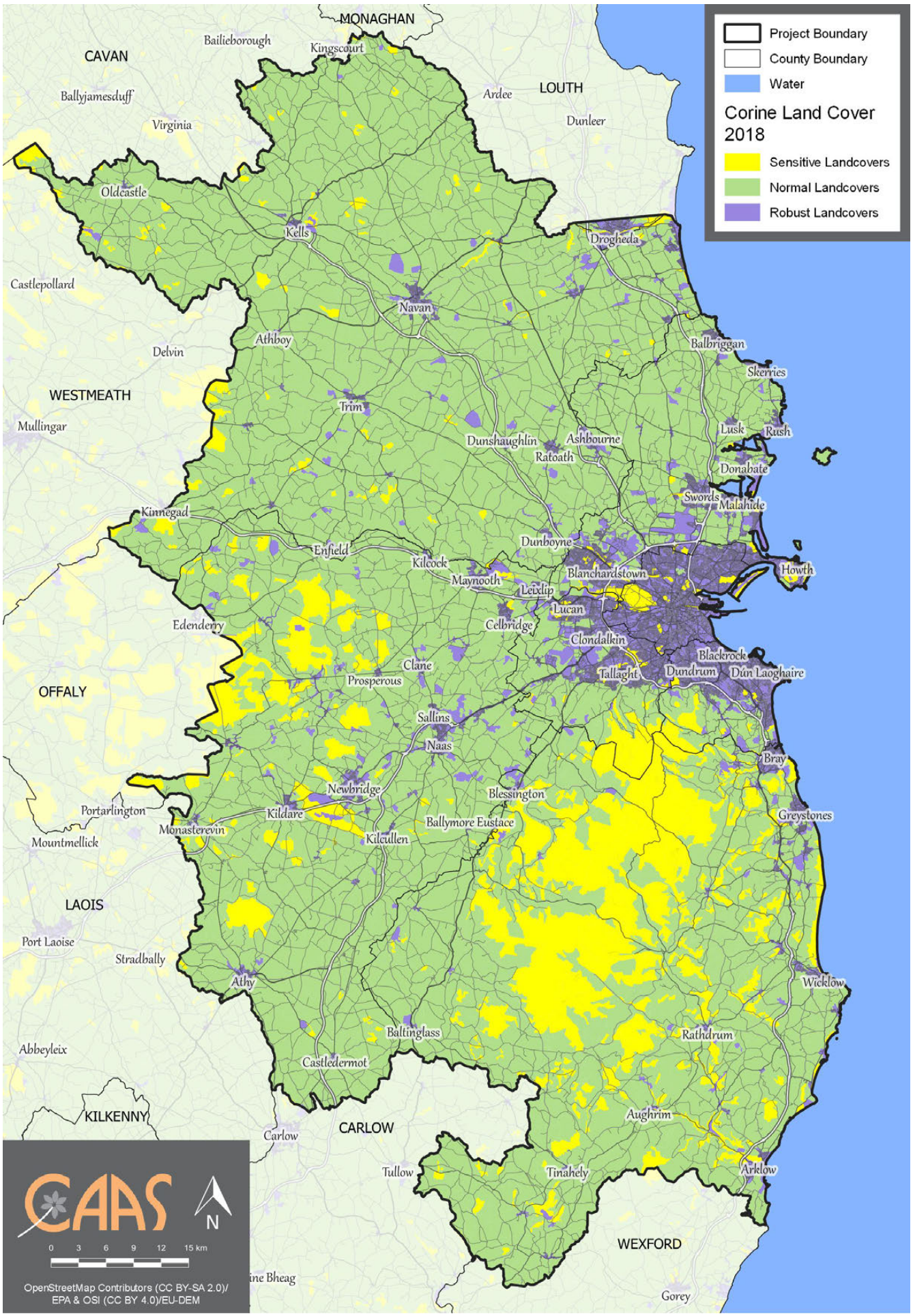

Figure 4.21 Potential Landcover Sensitivity Mapping

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.

There are many sites of significant archaeological interest within the Strategy area (mapped on Figure 4.22), including the UNESCO World Heritage Site of Brú na Bóinne, which refers to the area within the bend of the river Boyne around Newgrange, Knowth and Dowth, and is one of the world's most important archaeological complexes. It contains many outstanding archaeological features, notably its megalithic art, the large and varied grouping of monuments, and evidence of continuous settlement and activity in the area for some 7,000 years.

There are five sites within the Strategy area included on the Tentative UNESCO World Heritage Sites List (mapped on Figure 4.22): Kells; Hill of Tara; Glendalough; Kilcullen; and the Historic City of Dublin. A Tentative List is an inventory of properties, which a country intends to consider for nomination to the World Heritage List.

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)[43] 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

[43] 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).

(SMR Zones of Notification). The SMR formed the basis for issuing the RMP.

Figure 4.22 shows the spatial distribution of recorded monuments within the Strategy area and beyond. There are thousands of Recorded Monuments within the Strategy area, concentrated within urban/suburban areas and are less common in areas which are not settled, most noticeably much of the Wicklow Mountains.

There are 122 Monuments in State Care (95 in State Ownership and 27 in State Guardianship)[44] within the Strategy area (mapped on Figure 4.22).

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 riverine heritage such as shipwrecks, piers, quay walls, fords, stepping stones and associated archaeological objects and features.

[44] 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.

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 curtilage[45] 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

[45] 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.

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 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 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.

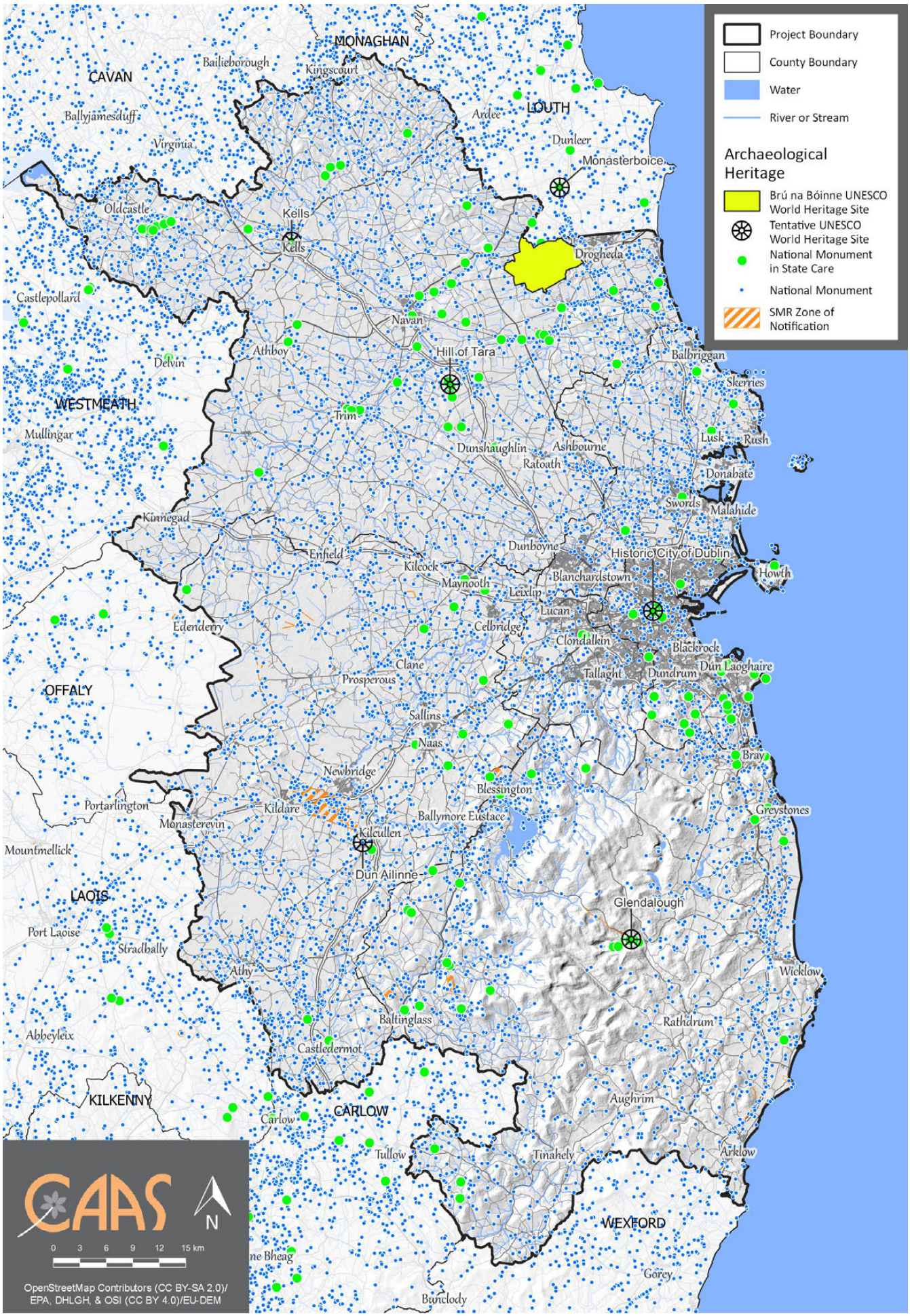

Figure 4.22 Archaeological Heritage

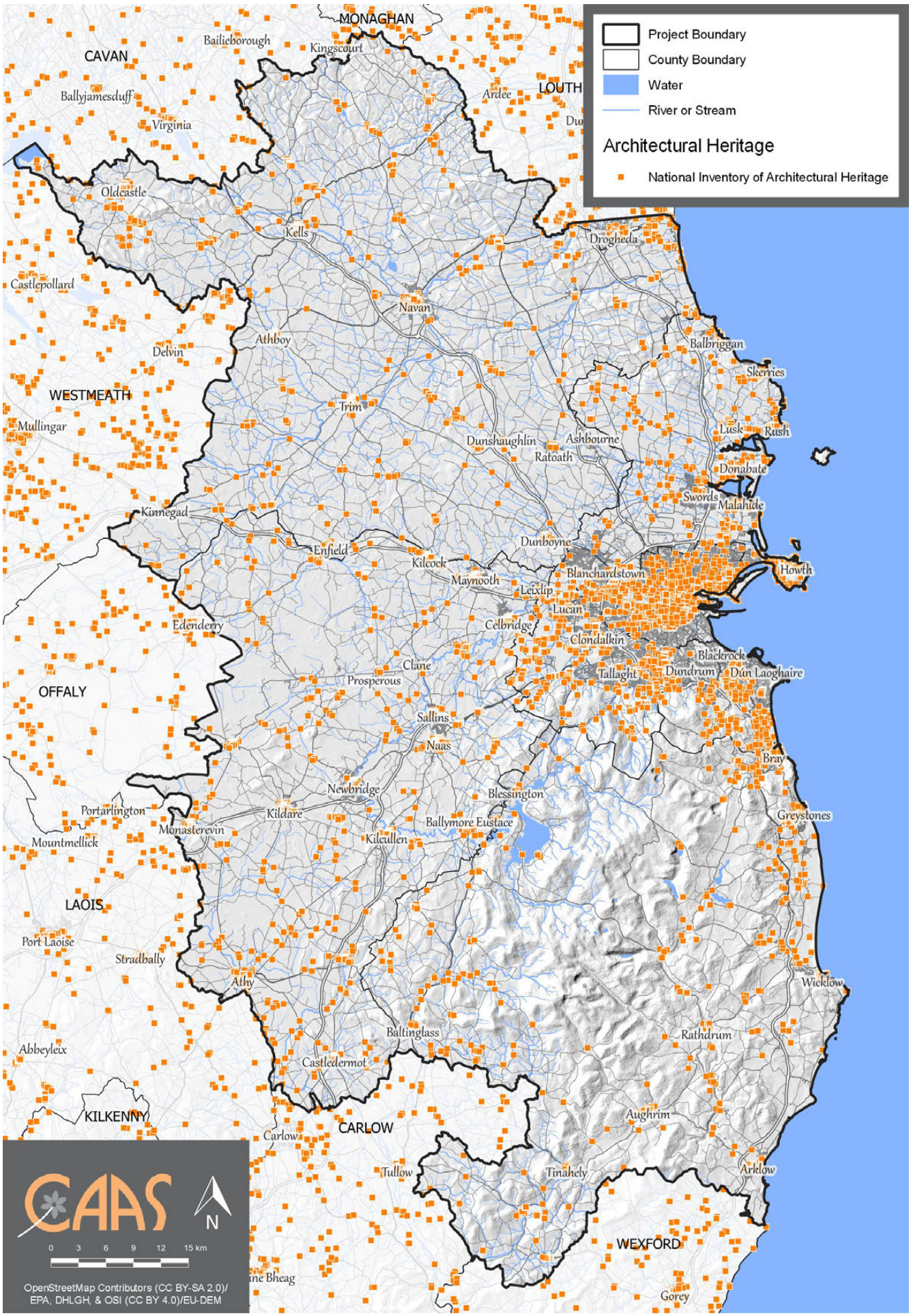

Figure 4.23 Architectural Heritage

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 environmental robustness (potential opportunities) (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 4.2 and Table 4.3 below.

4.12.6 Environmental Sensitivities

For the environmental sensitivity mapping shown on Figure 4.24, weightings were applied as per Table 4.2. 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. Heightened areas of sensitivity within the GDA include those in the uplands and foothills of the Wicklow Mountains, in the bog areas of west Kildare, in river valleys (e.g. the River Boyne in central and North Meath, the River Barrow in West and South Kildare and Slaney in South Wicklow) and at lakes. Lands at the coastal margins and coastal waters adjacent to the GDA are also sensitive, especially within and to the north of Dublin Bay. Lower levels of sensitivity occur elsewhere.

Table 4.2 Environmental Sensitivity Layers and Weighting

Layer	Weight
Any areas covered by SACs or SPAs (Figure 4.3)	10
Any areas covered by NHAs (Figure 4.5)	10
Any areas covered by pNHAs or potential Annex I landcovers (Figure 4.5 and Figure 4.9)	5
Dublin Bay UNESCO Biosphere Reserve	Core Zone - 15; Buffer Zone – 10; Transitional Zone -5
Margaritifera Sensitive Areas (Figure 4.8)	5
Sensitive Landcovers (Figure 4.21)	10
County Geological Sites (Figure 4.11)	10
Landslide Susceptibility (Figure 4.11)	High -10 Moderate- 5
OPW CFRAM/NIFM flood mapping	10
Brú na Bóinne UNESCO World Heritage Site (Figure 4.22)	15
Tentative UNESCO World Heritage Sites (Figure 4.22)	10

Layer	Weight
National Monuments in State Care with 300m buffer, Recorded Monuments with 150m buffer and SMR Zones of Notification, and entries to the National Inventory of Architectural Heritage with 150m buffer (Figure 4.22 and Figure 4.23)	10
Highest Water Sensitivity (highest scores on Figure 4.15 from 35 to 50 inclusive)	15
Moderate Water Sensitivity (middle scores on Figure 4.15 from 20 to 30 inclusive)	10
Lowest Water Sensitivity lowest scores on Figure 4.15 from 5 to 15 inclusive)	5

4.12.7 Environmental Opportunities/ Robustness

For the environmental robustness mapping shown on Figure 4.25 weightings were applied as per Table 4.3. 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 robustness within the GDA include those within and surrounding the M50 motorway, in much of County Meath, especially south and south-east Meath, in much of County Kildare, especially north-east Kildare, and in County Wicklow, between the Mountains and the coast. Lower levels of robustness occur elsewhere.

Table 4.3 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 NHAs, pNHAs or potential Annex I landcovers (Figure 4.4)	10
Robust Landcovers (Figure 4.21)	10
Normal Landcovers (Figure 4.21)	5
Areas not covered by Margaritifera Sensitive Areas (Figure 4.8)	5
Areas not covered by Dublin Bay UNESCO Biosphere	15
Areas not susceptible to landslides (Figure 4.11)	5
Areas not covered by County Geological Sites (Figure 4.10)	10
National Monuments in State Care with 300m buffer, Recorded Monuments with 150m buffer and SMR Zones of Notification, and entries to the National Inventory of Architectural Heritage with 150m buffer (Figure 4.22 and Figure 4.23)	10
Areas not covered by Brú na Bóinne UNESCO World Heritage Site (Figure 4.22)	15
Water Sensitivity High (lowest scores on Figure 4.15 from 5 to 15 inclusive)	5
Water Sensitivity Moderate (middle scores on Figure 4.15 from 20 to 30 inclusive)	10
Water Sensitivity Low (highest scores on Figure 4.15 from 35 to 50 inclusive)	15
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

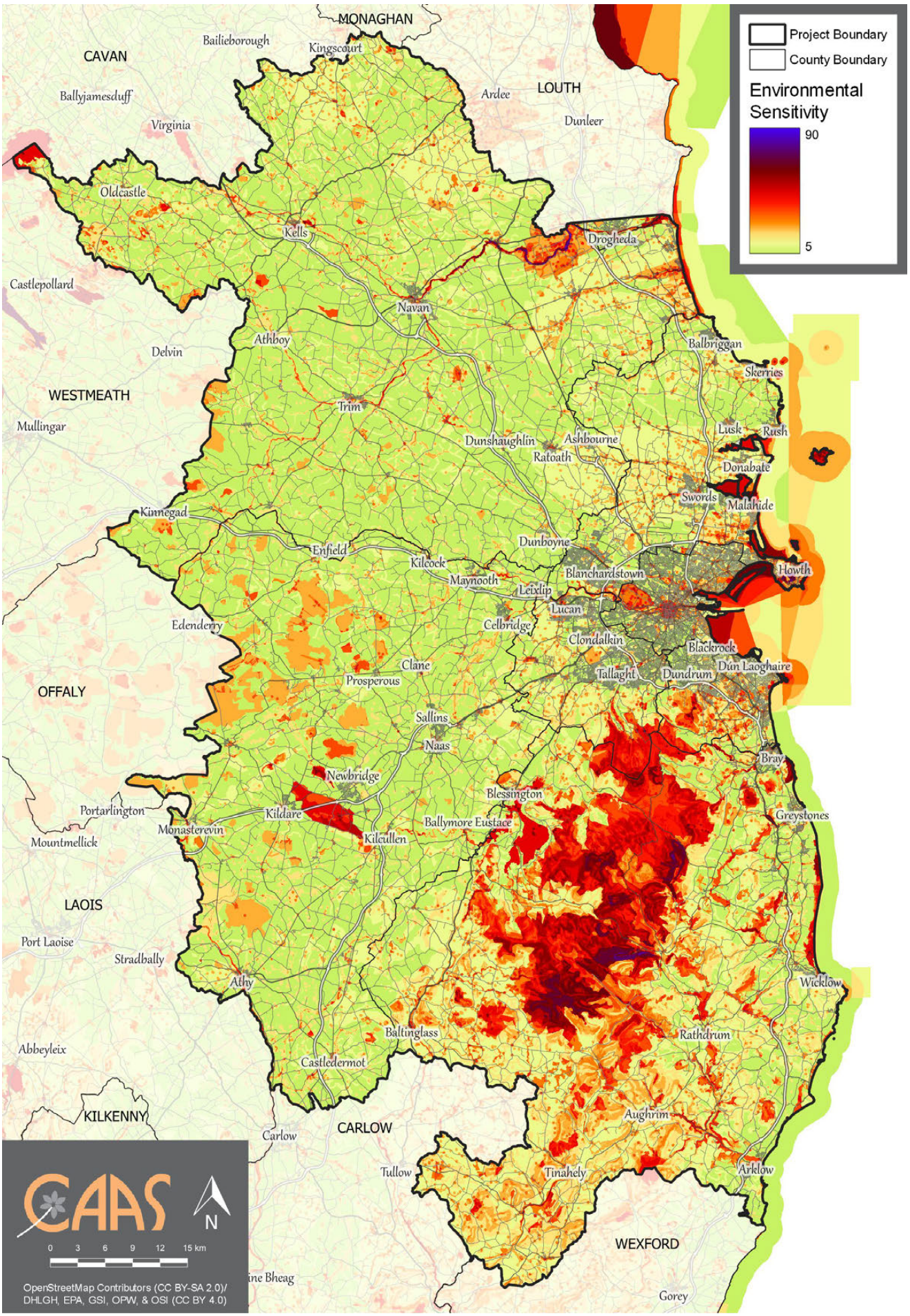

Figure 4.24 Overall Potential Environmental Sensitivity

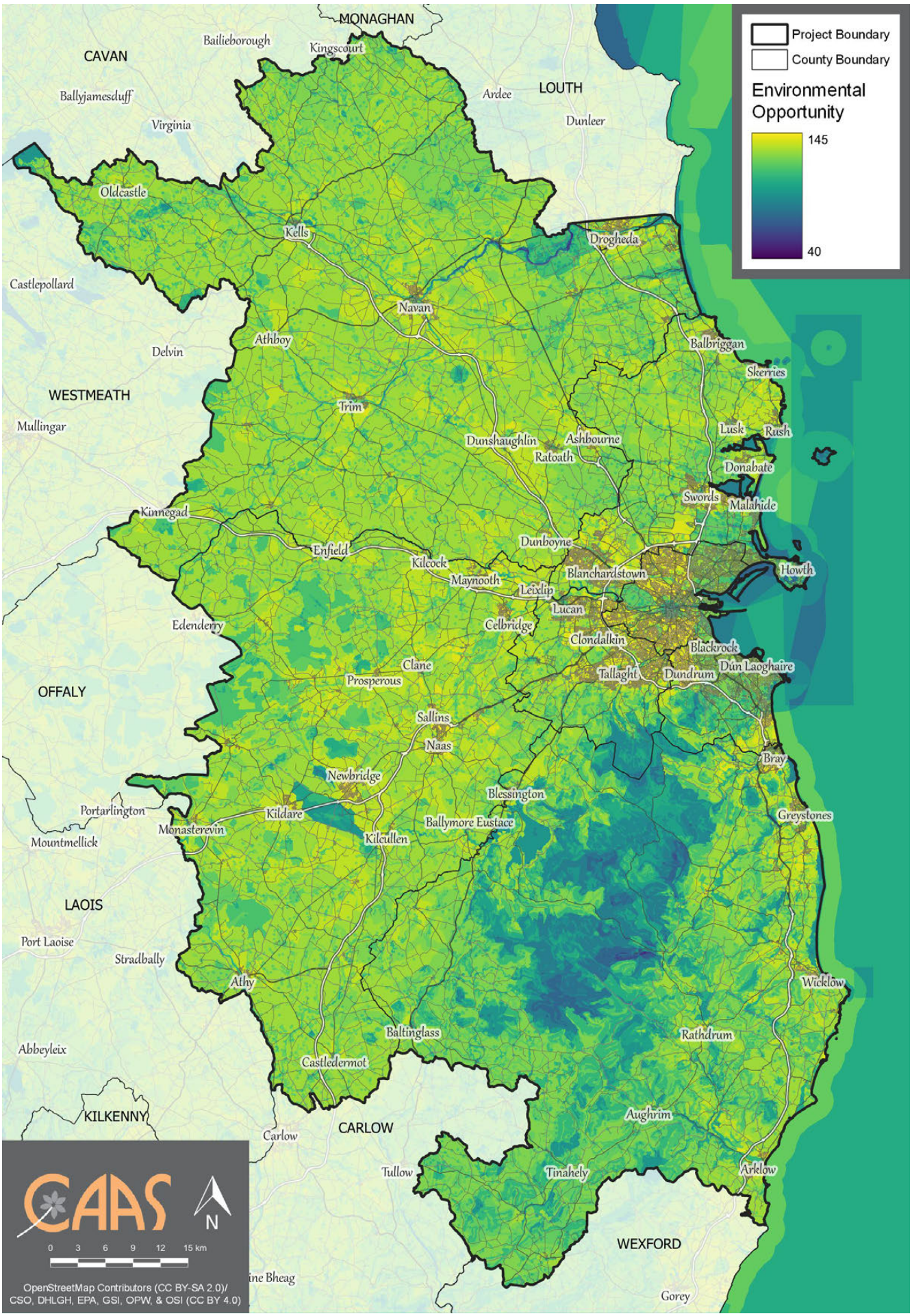

Figure 4.25 Overall Potential Environmental Opportunities

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 Eastern and Midland 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	• 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 by 2020 and move closer to WHO recommended levels	• Proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring	• Decrease in proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter
Climatic Factors	**C**	Achieving transition to a competitive, low carbon, climate-resilient economy that is cognisant of environmental impacts	• 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	• Implementation of the Strategy, which will contribute towards and facilitate climate action	• To implement the Strategy, which will contribute towards and facilitate climate action
				• A competitive, low-carbon, climate-resilient and environmentally sustainable economy	• Contribute towards transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050
				• Share of renewable energy in transport	• 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
				• Carbon dioxide (CO_2) emissions across the transport sector	• Contribute towards the target of aggregate reduction in carbon dioxide (CO_2) emissions of at least 80% (compared to 1990 levels) by 2050 across the transport sector
				• Energy consumption, the uptake of renewable options and solid fuels for residential heating	• To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating
				• Proportion of journeys made by private fossil fuel-based car compared to previous levels	• Decrease in the proportion of journeys made by residents of the County using private fossil fuel-based car compared to previous levels
				• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures
				• Compliance of planning permissions with Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 18 of the Strategy	• 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 18 of the Strategy

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	• 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	• Implementation of the Strategy, which will contribute towards and facilitate economic growth	• To implement the Strategy, which will contribute towards and facilitate economic growth
				• Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Strategy	• No spatial concentrations of health problems arising from environmental factors as a result of implementing the Strategy
				• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures • Access to sustainable modes of transport	• 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	• 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	• Condition of European sites	• 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
				• Number of projects that have integrated ecosystem services considerations	
				• EIAs and AAs as relevant for new projects	• Screen for and undertake EIA and AA as relevant for new projects
				• Compliance of planning permissions with Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 18 of the Strategy	• 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 18 of the Strategy
Material Assets	**MA**	Sustainable and efficient use of natural resources	• 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	• 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	• 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	• 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	• 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	• 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	• 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	• 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	• 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	• To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention	• 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	• 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	• Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage	• 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	• 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
				• 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	• 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

Under the Dublin Transport Authority Act, the National Transport Authority (NTA) must review its transport strategy every 6 years. Arising from the review of the 2016 plan, an updated strategy has been developed which sets out the framework for investment in transport infrastructure and services over the next two decades to 2042.

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 Eastern and Midland Region (as adopted by the Eastern and Midland Regional Assembly, and finalised in January 2020) and associated Dublin Metropolitan Area Strategic Plan, 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 various elements of the Strategy are at different stages in the planning/environmental process. Furthermore, different elements of the Strategy will be developed by different agencies, at different times, according to different funding allocations.

Transportation is highly integrated with both land-use planning and the provision of other public infrastructure, such as water services. Different alternative scenarios will give rise to different land-use patterns, resulting in different environmental effects.

The Strategy was developed and assessed in the context of three notional **Investment Scenarios** as follows:

1. Business as Usual Scenario that incorporates committed investment in the road network and public transport only;
2. Improvements to Public Transport and Sustainable Travel - scenario this substantially increases public transport investment; and,
3. Improvements in Public Transport and Sustainable Travel, with complimentary Demand Management Measures - this scenario has elements of Scenario 2 but with the addition of demand management measures to influence the choice of travel.

6.4 Investment Scenarios

6.4.1 Scenario 1: Business as Usual

Choice 1 is the 'Business As Usual' scenario. This scenario is based on the continuation of the trend that investment in transport infrastructure in the GDA would be predominantly focussed on a mix of road capacity improvements and public transport schemes, such as BusConnects Network Redesign to accommodate the growth and changes in travel demand.

Committed improvements would be realised. However, investment in Strategic Public Transport, such as Metrolink would not be included. Investment in walking and cycling networks would remain static.

Land use policy within the GDA would continue in line with the RSES.

6.4.2 Scenario 2: Improvements to Public Transport and Sustainable Travel

Choice 2 is to prioritise investment in providing a comprehensive public transport network in line with the Strategy proposals.

New heavy rail, metro and luas infrastructure would be built, and frequencies on existing routes would be increased.

Bus services would be significantly improved in line with the BusConnects Project, with the full implementation of the Network Redesign, Ticketing and Core Bus Corridor elements of the Programme.

The GDA Cycle Network would be delivered in full, and walking permeability prioritised.

Land use policy within the GDA would continue in line with the RSES.

6.4.3 Scenario 3: Improvements in Public Transport and Sustainable Travel, with complimentary Demand Management Measures

Choice 3 builds upon Choice 2 and represents the optimal utilisation of the transport network in the GDA.

Measures such as parking restrictions, reduced accessibility and permeability for vehicular traffic, particularly in town centres and other destinations will be included.

In addition a network wide reduction in road speed limits for vehicular traffic, and reconfigured junction signal times in favour of pedestrian / cycle / public transport movement will be implemented.

Land use policy within the GDA would continue in line with the RSES.

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.

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[46]'.

The interactions identified are reflective of likely significant environmental effects[47].

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.

[46] '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.

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

Table 7.1 Strategic Environmental Objectives

Environmental Component	SEO Code	Strategic Environmental Objectives
Air	**A**	• 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 by 2020 and move closer to WHO recommended levels
Climatic Factors	**C**	• 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**	• 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**	• 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**	• 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**	• 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**	• 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**	• To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention
Cultural Heritage	**CH**	• 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**	Likely to **Improve** status of SEOs	Likely to **Improve** status of SEOs to a **lesser** degree	**Least Potential Conflict** with status of SEOs - most likely to be mitigated	**Potential Conflict** with status of SEOs - to be mitigated	**Probable Conflict** with status of SEOs - **less likely to be mitigated**

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 8.5 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 8.5) 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 Eastern and Midland 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 2019 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 7.3.

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.

7.4 Detailed Evaluation of Alternatives[48]

The environmental effects detailed on Table 7.3 would be present to varying degrees as a result of the construction and operation of development under the different alternatives.

Table 7.3 Effects common to all Alternatives

Environmental Component	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated
Air and climatic factors	• 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).	• Emissions to air and associated issues.
Population and human health	• 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.	• Potential interactions if effects upon environmental vectors such as air are not mitigated.
Biodiversity and flora and fauna	• 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.	• 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, if any, are progressed. • Potential effects on vegetation from transport emissions.
Material Assets	• 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	• Generation of construction waste. • Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure.

[48] Footnotes like this are used in this section in order to identify instances where interactions between the relevant alternative and the relevant SEOs occur. The nature of these interactions is identified on Table 7.4.

Environmental Component	Significant Positive Effect likely to occur	Potentially Significant Adverse Effect, if unmitigated
	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.	
Water	• 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.	• 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	• Contributions towards the protection of landscape designations as a result of facilitating compliance with relevant plans.	• Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape.
Cultural Heritage	• 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, cycling and light rail/metro.	• 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	• 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.	• 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 Scenarios would help to contribute towards meeting the various Strategy challenges, with varying degrees of success. These challenges are detailed in the Strategy and comprise:

- Climate Change
- Recovery from the Covid-19 Pandemic
- Servicing the Legacy Development Patterns
- Revitalisation of the City Centre and Town Centres
- Transformation of the Urban Environment
- Ensuring Universal Access
- Serving Rural Development
- Improving Health and Equality
- Fostering Economic Development
- Delivering Transport Schemes

As Scenario 1 “Business as Usual” would progress sustainable mobility initiatives to a lesser extent than the other two scenarios, it would contribute towards meeting the various Strategy challenges the least. It would not be as successful as the other scenarios at addressing congestion, contributing towards climate action and revitalising urban areas.

A mix of road capacity improvements and public transport schemes would potentially conflict with the protection of the environment, however, by not progressing certain strategic public transport projects these potential direct conflicts with the environment would be avoided.

Indirectly, however, by not fully addressing the various Strategy challenges, this scenario would see greater demand for development in more dispersed settlements, making compact growth more difficult to achieve and increased levels of sprawl more likely. Such development, which would have higher levels of car dependency and result in more trips by car, would be likely to result in the following adverse environmental effects:

- Significant delays in reaching targets for lower emissions to air – including noise and pollutants – and this would be compounded by lower utilisation of public transportation;
- A failure to maximise contributions towards improving sustainable mobility and managing traffic flows;
- A reduced efficiency of energy resource utilisation;
- Reduction in the economic viability of services, such as water services, and heightened potential for adverse effects on the protection of waters - and associated interactions with ecology and human health;
- More frequent and severe conflicts with environmental components including biodiversity, air and water; and
- Reduction in potential placemaking in urban areas as a result of failing to replace motorised modes of transport with more sustainable and non-motorised modes.

Scenario 2 “Improvements to Public Transport and Sustainable Travel” would prioritise investment in providing a comprehensive public transport network:

- New heavy rail, metro and luas infrastructure would be built, and frequencies on existing routes would be increased.
- Bus services would be significantly improved in line with the BusConnects Project, with the full implementation of the Network Redesign, Ticketing and Core Bus Corridor elements of the Programme.
- The GDA Cycle Network would be delivered in full, and walking permeability prioritised.

In this way, Scenario 2 would significantly progress sustainable mobility initiatives and would make significant contributions towards meeting the various Strategy challenges listed above. It would be significantly more successful than Scenario 1 at addressing congestion, contributing towards climate action and revitalising urban areas, for example.

As Scenario 2 would provide for the construction of many new projects to provide a comprehensive public transport network, it would present potential direct conflicts with the environment, especially during the construction phase and there would be a requirement to mitigate these.

By making significant contributions in addressing the various Strategy challenges, this scenario would help to facilitate compact growth and reduce sprawl. Compact growth accompanied by a comprehensive public transport network would have lower levels of car dependency and result in fewer trips by car and would be likely to make significant contributions towards:

- Reaching targets for lower emissions to air – including noise and pollutants;
- Improving sustainable mobility and managing traffic flows;
- Increasing the efficiency of energy resource utilisation;
- Increasing in the economic viability of services, such as water services, and lowering the potential for adverse effects on the protection of waters - and associated interactions with ecology and human health;
- Reducing the frequency and severity of conflicts with environmental components, including biodiversity, air and water; and
- Increasing the potential of placemaking in urban areas as a result of replacing motorised with more sustainable and non-motorised modes of transport.

Notwithstanding the above, Scenario 2 would not incorporate Demand Management Measures. By incorporating, Demand Management Measures, Scenario 3 "Improvements in Public Transport and Sustainable Travel, with complimentary Demand Management Measures" would optimise the utilisation of the transport network in the GDA. Demand Management Measures would encompass:

- Parking restrictions
- Reduced accessibility and permeability for vehicular traffic, particularly in town centres and other destinations
- Network wide reduction in road speed limits for vehicular traffic
- Reconfigured junction signal times in favour of pedestrian / cycle / public transport movement

Scenario 3 would progress sustainable mobility initiatives the most out of each of the three scenarios and would make the greatest contribution towards meeting the various Strategy challenges listed above. It would be more successful than both Scenarios 1 and 2 at addressing congestion, contributing towards climate action and revitalising urban areas, for example. Scenario 3 would build on Scenario 2 and the positive environmental effects of implementing a Transport Strategy under this scenario would be greater than under both Scenarios 1 and 2.

7.4.1 Comparative Evaluation of Investment Scenarios against SEOs

Table 7.4 provides a comparative evaluation of alternatives against SEOs.

Table 7.4 Comparative Evaluation of Investment Scenarios against SEOs

Alternative	Likely to **Improve** status of SEOs to a **greater degree**	Likely to **Improve** status of SEOs	Likely to **Improve** status of SEOs to a **lesser** degree	**Least Potential Conflict** with status of SEOs - most likely to be mitigated	**Potential Conflict** with status of SEOs - to be mitigated	**Probable Conflict** with status of SEOs - **less likely to be mitigated**
Scenario 1: Business as Usual			**A C PHH BFF MA S W L CH**			**A C PHH BFF MA S W L CH**
Scenario 2: Improvements to Public Transport and Sustainable Travel		**A C PHH BFF MA S W L CH**			**A C PHH BFF MA S W L CH**	
Scenario 3: Improvements in Public Transport and Sustainable Travel, with complimentary Demand Management Measures	**A C PHH BFF MA S W L CH**			**A C PHH BFF MA S W L CH**		

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 fauna'.

The interactions identified are reflective of likely significant environmental effects[49]:

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.

[49] 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**	• 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 by 2020 and move closer to WHO recommended levels
Climatic Factors	**C**	• 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**	• 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**	• 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**	• 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**	• 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**	• 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**	• To implement the identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention
Cultural Heritage	**CH**	• 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

8.2 Overall Findings

The overall findings of the SEA are that:

- **Final 2030 Emissions Assessment**
  The implementation of the Strategy elements intended for delivered by 2030, coupled with the planned vehicle electrification and increased use of bio-fuel set out in the Climate Action Plan 2019, will see transport emissions in the GDA decrease from a "business as usual" figure of 3.4 $MtCO_2eq$ in 2030 to 2.0 $MtCO_2eq$, also in 2030. This represents a reduction of 45% from the 2018 GDA emissions total of 3.2 $MtCO_2eq$.

  Additional measures are required to further reduce emissions to meet the 51% reduction target of 1.6 $MtCO_2eq$. A number of alternative approaches, as set out above, are available to achieve this supplemental reduction.

  It is acknowledged that Approach 1 (increased fuel price) and Approach 2 (additional electrification) are national policy issues rather than regional matters. It is likely that general carbon pricing policy will see increased fuel costs of some level over the coming years to reflect the overall objective of reducing fossil fuel use.

  In relation to additional electrification (Approach 2), the already planned level of electrification by 2030 is highly ambitious and the potential to further ramp this up is limited. Accordingly, most of the remaining emissions reduction target will fall to be achieved by the types of demand management measures set out under Approach 3.

  However, there are various permutations of such proposals available 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 2019 and derived from the carbon budgets to be established under the Climate Action Plan and Low Carbon Development (Amendment) Act 2021.

- **Emissions Levels in 2042**
  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 2042, the final year of this strategy, it is intended that emissions will continue on a downwards trajectory between 2030 to 2050.

  The continued electrification of the transport fleet and the implementation of the remaining elements of this strategy will further reduce greenhouse gas emissions within the GDA. Assessment work carried out has indicated that greenhouse gas emissions from transport in the GDA will reduce to below 1 $MtCO_2eq$ by 2042.

- **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 Goals[50] of the 2030 Agenda for Sustainable Development.

[50] 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.

- **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 light rail/metro, cycling and walking.

- **Potentially Significant Adverse Effects to be mitigated**
  Potentially significant adverse environmental effects arising from the Strategy are detailed on Table 8.4. 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.

The Strategy will contribute to an enhanced natural and built environment by:

- Supporting Consolidated Development

  The Strategy sets out a number of policies and objectives that directly benefit the policy of development consolidation. Chapter 8 contains a number of planning principles which the NTA will endeavour to ensure are incorporated into Development Plans and other planning policy documents, and are applied to development proposals, via our role as a prescribed body for planning matters. The proposed transport network is focussed on facilitating the development of brownfield land primarily, while serving a number of major strategic medium density greenfield developments, which are contiguous to the built-up area of Dublin. The Strategy therefore facilitates the growth and development of the GDA in a manner which reduces urban sprawl; land take; damage to habitats; protects biodiversity; and avoids potential adverse effects on protected sites.

- 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.
- 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.

- Improving the Public Realm and Supporting Placemaking

  In terms of contributing to a better built environment, the measures outlined in the Strategy (Chapters 8, 10 and 14 in particular) place a great emphasis on the creation of people-centred urban areas – the transformation of streets as thoroughfares into places people wish to congregate and where movement on foot and by bicycle is safer and more convenient. The development of the walking and cycling network, as well as the development of high-quality public transport across the GDA would foster the development of Dublin's urban villages and other towns, as well as maintaining and enhancing the role of Dublin City Centre. This placemaking approach would contribute to an enhanced urban environment

- Reducing the Impacts of Traffic

  The reorientation of transport and land use planning away from the facilitation of the private car is likely to contribute to this environmental objective by reducing the dominance of this mode across the settlements of the GDA. This would lead to improved air quality, greater road space reallocation to sustainable modes, and the improvement of the visual environment by reducing the effects of cars parked - both on-street and in off-street car parks - which can dominate urban environments.

- Reducing Carbon Emissions

  The Strategy, in combination with other Government policies and programmes is forecast to lead to a reduction in carbon emissions from transport in the GDA from 3.2 $MtCO_2eq$ in 2018 to c.1.0 $MtCO_2eq$ in 2042.

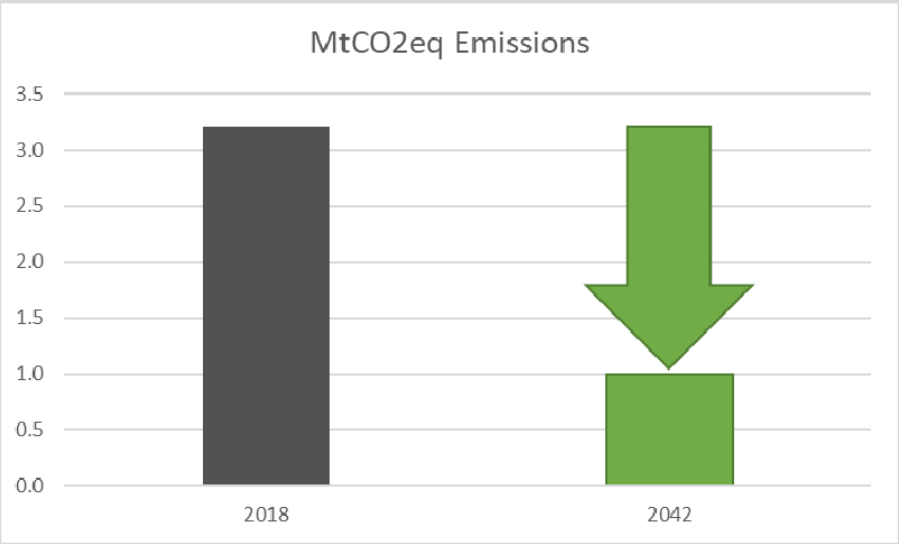

Figure 8.1 GDA Transport Emissions 2018 and 2042

- Improving Air Quality

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

Table 8.3 Air-polluting Emissions 2016 and 2042 (Kg)

	NO_x	**NO_2**	**PM10**	**PM2.5**
2016	7,182,430	2,234,190	537,350	357,300
2042 With Strategy	1,217,850	259,640	445,270	247,590
Reduction	-83%	-88%	-17%	-31%

- Reducing Noise

  The Strategy leads to a significant reduction in the use of the private car for trips for all purposes (see following section). This is forecast to reduce the numbers of people exposed to unacceptable noise levels from traffic, in particular within urban areas. The number of goods vehicles travelling in the GDA is expected to increase as a result of growth over the period of the strategy. While this may lead to

some localised impacts in terms of increased noise, it is forecast – in line with policies and objectives related to the management of Heavy Goods Vehicles – that these adverse effects would arise primarily on the national and strategic road network, rather than on local roads and as such, would not lead to a significant increase in the population exposure to high noise levels. The electrification of the public transport fleet, in addition to the private car fleet and light commercial goods vehicles, is likely to lead to reductions in noise as electric vehicles are generally quieter than those using ICEs. Overall the Transport Strategy, in combination with other Government policies and developing technologies, is forecast to lead to a reduction in the numbers of people in the GDA being exposed to high noise levels from transport.

- Improving Mode Share

  The Strategy is forecast to lead to a significant reduction in car mode share for the GDA from 57.7% in 2016 to 48.6% in 2042 for all trip purposes throughout the day. The Cycling mode share for all trips over the 24 hour period is forecast to increase from 3.7% in 2016 to 11.5% in 2042. In Metropolitan Dublin, the mode share for car is forecast to fall from 52.4% to 41.9% for the 24hr period, with public transport forecast to increase to 19.7% and cycling to 14.1%. The numbers using public transport in the GDA over a 24 hour period increase by 39%, leading to a mode share increase from 14.6% to 17.5%. In the Metropolitan Area, these figures are 17.0% and 19.7% respectively.

- Reducing Vehicle Kilometres

  The Strategy is forecast to lead to an 18% reduction in the number of vehicle-kilometres travelled to work compared to 2016 and an 8% reduction for business trips. Vehicle kilometres travelled is forecast to reduce by 10% for all trips including commercial vehicles, Heavy Goods Vehicles and Taxis in 2042 with the strategy in place compared to without the strategy.

The Strategy will lead to a more connected communities and better quality of life by:

- Facilitating Higher Levels of Walking and Cycling

  The reorientation of the transport network towards these modes, as set out in chapters 8, 10, 11 and 14 will ensure that people in the GDA will be provided with a walking and cycling environment which will greatly enhance their accessibility to services such as schools, health facilities, shops etc. at the neighbourhood and district level, promoting greater use of these modes. Walking and cycling are, by their nature, more sociable modes of travel – people meet and interact more often – and contribute to a healthier lifestyle. For school travel, better walking and cycling facilities will help address childhood obesity by providing exercise at the start and end of the school day. Overall, the transport strategy's approach to these modes will help knit communities closer together and will contribute significantly to a better quality of life.

- Extending High Quality Public Transport Coverage

  The level of public transport service on offer to an individual and the quality of that service is a major factor in that person's quality of life. The Strategy sets out a wide range of public transport measures which, in combination, would provide the people of the GDA with a significantly enhanced quality of life in this regard, in the following ways:
  - Reduced waiting times for public transport due to greater coverage of high frequency services;
  - Faster commutes by rail and by bus due to infrastructural improvements;
  - Better reliability and associated reduced travel stress; and
  - Reduced rural isolation as a result of increased coverage and frequency of services.

- Reducing Travel Time to Major Destinations

  With the Strategy in place in 2042, the number of people living within 30 minutes journey time to major destinations in the AM Peak increases significantly. 31% more residents of the GDA will be able to reach the City Centre in that time by public transport and 45% more will be within 30 minutes of a major hospital.

- Improving Road Safety

  The implementation of the Strategy is forecast to save 86 lives over its appraisal period and 333 serious casualties when compared to a scenario without the Transport Strategy, using the most accurate transport modelling and appraisal methods.

The Strategy will contribute to a strong and sustainable economy by including measures relating to:

- Fostering Economic Activity

  By proposing a comprehensive and integrated transport network that serves all trip purposes by all modes at all times of the day, the Strategy ensures that the value of the maximum range of activities will be harnessed and that the economic costs of congestion and suppressed demand due to inconvenience are reduced. Furthermore, by providing for a step change in the capacity of the transport system, the Strategy facilitates the more efficient concentration of growth into the City Centre and major centres of economic activity in the GDA. This agglomeration benefit comprises a virtuous circle whereby greater access by sustainable modes increases the potential for investment in our centres. This investment creates greater demand for movement and improvements to the transport system, which when delivered increases investment in turn.

- Facilitating a Greater Level of Business Travel

  Transport Strategy is forecast to facilitate a greater level of business travel, and a much greater amount of this travel is forecast to be undertaken by sustainable transport, with these modes accounting for 38% of business trips in 2042 with the strategy in place, compared to 26% in 2016. However there will be a slight increase in journey time effecting businesses still dependent on the car.

- Trips to Work

  Facilitating a far more sustainable pattern of commuting and is likely to remove a significant number of people out of congested networks onto free-flowing public transport and cycling networks, in particular in Metropolitan Dublin and the larger urban centres of the GDA.

- Goods Vehicles

  The Strategy is forecast to facilitate more than double the amount of goods vehicles trips in 2042 compared to 2016. There is an increase of approximately 7 minutes in the average journey time for goods vehicles over that period. This indicator should be read in conjunction with the significant improvements in indicators for other trip purposes, and in particular in the context of the traffic management measures required to meet Climate Change targets. The Strategy sets out an ambitious programme of engagement between all of the major freight stakeholders and provides for the development of a freight strategy which will aim to deliver significant improvements to this sector, taking full account of emerging challenges such as Brexit and the recovery from Covid-19.

- Travel to Dublin Port

  The Strategy facilitates more than double the amount of vehicles accessing Dublin Port in the AM Peak compared to 2016. While the travel time increases, this clearly demonstrates that the strategy protects the strategic function of Dublin Port by ensuring that the radical interventions required across the GDA to meet climate change targets, do not adversely affect the movement of essential goods traffic to and from Dublin Port.

- Travel to Dublin Airport
  The overall number of people that access Dublin Airport increases by 66% in 2042 with the strategy in place compared to 2016. The numbers travelling by public transport is forecast to almost triple to over 16,000 in the same period. It should also be noted that the number of car trips reduces significantly with the strategy in place in 2042 compared to a scenario without the strategy, with an associated increase in public transport. This clearly demonstrates the manner in which the measures proposed in the strategy, such as MetroLink and the Core Bus Corridors, protect and foster the growth of this strategic national asset. Similar outcomes arise for the AM Peak period.

The Strategy will foster an inclusive transport system by:

- Continuing to Improve Inclusion and Equality

  It sets out a statutory framework committing the NTA and all other agencies in the GDA to the implementation of measures to ensure the transport system meets the needs of all members of society,

and to advertising and education campaigns which seek to inform people of specific needs of others. In terms of the transport system itself, the Strategy commits the NTA and transport operators to the delivery of stations, stops, vehicles and passenger information ad signage that meet the highest standards required in this regard. As such, the Transport Strategy, within its statutory remit, commits all actors in this area to an inclusive transport system, building on the work done to date.

- Increasing Accessibility to Jobs

  The Strategy is forecast to increase the numbers of jobs accessible to people living in the GDA by 30 minutes public transport time by 5%.

- Increasing Accessibility to Jobs for those Living in Disadvantaged Areas

  The Strategy is forecast to increase the numbers of jobs accessible to people living in Disadvantaged Areas in the GDA by 30 minutes public transport time by 57%. Car ownership rates are significantly lower in disadvantaged areas and as such, this is an important metric which demonstrates the impact of the strategy in facilitating access to the labour market for those with limited travel options.

- Increasing Accessibility to High Frequency Public Transport

  The number of people forecast to be living within a 800m catchment of a rail, light rail or high frequency bus service will grow by 182% between 2016 and 2042 with the strategy in place.

- Promoting Culture and the Night-Time Economy

  The implementation of the Strategy will contribute significantly to the promotion of the cultural, hospitality and night-time economy of the GDA. By providing high-quality public transport services on a 24hr basis in Metropolitan Dublin; by improving the level of service offered by the SPSV sector; and by improving connectivity to the urban centres and rural areas by public transport, these parts of the economy – which operate primarily outside of the traditional transport peak hours – would benefit significantly.

Table 8.4 details the various types of environmental effects likely to arise with respect to the Strategy (as developed from the selected alternatives – see Section 7) 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) is being undertaken alongside the preparation of the Strategy. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The emerging conclusion of the AA is that the Strategy will not affect the integrity of the Natura 2000 network[51]. 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 is taking place concurrently and the findings of the AA have informed both the Strategy and the SEA.

[51] 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.

8.4 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 8.5.

Table 8.4 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**[52]	
Air and climatic factors	• 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).	• Emissions to air and associated issues.	• 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	• 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.	• Potential interactions if effects upon environmental vectors such as air are not mitigated.	• 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	• 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.	• 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, if any, are progressed. • Potential effects on vegetation from transport emissions.	• 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

[52] 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**[52]	
Material Assets	• 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.	• Generation of construction waste. • Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure.	• 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	• 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.	• 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.	• 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 erosion.	S
Water	• 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.	• 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.	• Flood related risks remain due to uncertainty with regard to extreme weather events.	W
Landscape	• Contributions towards the protection of landscape designations as a result of facilitating compliance with relevant plans.	• Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape.	• Residual visual effects (these would be in compliance with landscape designation provisions).	L
Cultural Heritage	• 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, cycling and light rail/metro.	• Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities, including as a result of increasing traffic flows.	• 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 8.5 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 8.5.10 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 Eastern and Midland 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 (SEOs B1 B2 B3):

- 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, if any, 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 18. “Environmental Protection and Management” of the Strategy).

8.5.1 Strategy Aim, Objectives, Outcomes and Phasing (Chapters 2, 17 and 18)

	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
Strategy Aim To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth. **Strategy Objectives** *An Enhanced Natural and Built Environment* To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use. *Connected Communities and Better Quality of Life* To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling. *A Strong Sustainable Economy* To support economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to, and facilitating the efficient movement of goods. *An Inclusive Transport System* To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

Commentary:

The Strategy Aims and Objectives would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

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 Strategy will contribute to an enhanced natural and built environment by:

- *Supporting Consolidated Development*
- *Improving the Public Realm and Supporting Placemaking*
- *Reducing the Impacts of Traffic*
- *Reducing Carbon Emissions*
- *Improving Air Quality*
- *Reducing Noise*
- *Improving Mode Share*
- *Reducing Vehicle Kilometres*

The Strategy will lead to a more connected communities and better quality of life by:

- *Facilitating Higher Levels of Walking and Cycling*
- *Extending High Quality Public Transport Coverage*
- *Reducing Travel Time to Major Destinations*
- *Improving Road Safety*

The Strategy will contribute to a strong and sustainable economy by:

- *Fostering Economic Activity*
- *Facilitating a Greater Level of Business Travel*
- *Facilitating a far more sustainable pattern of commuting*
- *Setting out an ambitious programme of engagement between all of the major freight stakeholders and provides for the development of a freight strategy which will aim to deliver significant improvements to this sector, taking full account of emerging challenges such as Brexit and the recovery from Covid-19.*
- *Protecting the strategic function of Dublin Port*
- *Protecting and Fostering the Growth of Dublin Airport.*

The Strategy will foster an inclusive transport system by:

- *Continuing to Improve Inclusion and Equality*
- *Increasing Accessibility to Jobs*
- *Increasing Accessibility to Jobs for those Living in Disadvantaged Areas*
- *Increasing Accessibility to High Frequency Public Transport*
- *Promoting Culture and the Night-Time Economy*

The pace of implementation of the Transport Strategy will be dictated by the level of available funding. While the planning process for schemes can be lengthy and complex, it is the budgetary environment which primarily determines the rate at which strategic infrastructure projects can be delivered. As such, the phasing of this strategy has been fully aligned with the National Development Plan 2021-30. As identified in the Strategy, the planning and design stage of major projects takes several years and significant progress has been made in the design and planning for MetroLink, the DART+ Programme, the BusConnects Core Bus Corridors and Luas Finglas. The implementation of the BusConnects New Dublin Area Bus Network has commenced and significant resources have now been allocated to the delivery of the GDA Cycle Network Plan across the local authorities.

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 Planning for Sustainable Transport (Chapter 8)

	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
This section sets out the measures that the NTA believes are essential in meeting the objectives of the transport strategy to foster sustainable development and to fully integrate land use planning and transport planning, as a means of reducing travel demand both in terms of numbers of trips made and the length of trips. Measures addressing the following issues are provided: • Housing and Transport • Consolidated Development • Retail Developments • Office Developments • Transit-Oriented Development • Mixed Uses • Filtered Permeability • School Site Selection • Location of Schools • Design of Schools • Road Network Serving Schools • Urban Design in Major Infrastructure Projects	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

• Urban Design in Walking and Cycling Projects • Reallocation of Road Space • Local Transport Plans • The Road User Hierarchy				

Commentary:

The Planning for Sustainable Transport Measures would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, transport is a derived demand, in that people travel primarily out of a need for other things such as education, work and shopping. The management of this demand where it is created is a critical element of transport planning in the GDA. The pattern of where people live, work, attend school or college, socialise etc. is therefore the key determinant in the type of transport system we require. Historically in the GDA, the location of services and employment, and the policy of providing car-based solutions to transport problems has led to the creation of an overly car-dependent city-region. The consequences of this include issues such as congestion, air pollution, severance, unattractive urban environments, poor walking and cycling environments, and a public transport system which is significantly compromised by the requirement to serve travel patterns which are dispersed and complex. These Planning for Sustainable Transport Measures would facilitate the integration of land use planning and transport planning, including consolidated and intensified development around public transport networks.

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 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 urban areas; 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 developing these lands would be mitigated by environmental requirements, including those contained within the relevant land use plans.

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 Integration and Improvement (Chapter 9)

	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
In advance of setting out the various strands of investment in the individual modes of transport, this chapter addresses the way in which the NTA will continue to develop these strands into a seamless and inclusive transport network across the GDA over the coming years. Measures addressing the following issues are provided:	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

• Integration of all Modes in Transport Schemes • International Gateways • Park & Ride • Major Interchanges and Mobility Hubs • Interchange • Fare Structure • Next Generation Ticketing • Mobility As A Service • Smarter Travel Workplaces and Campuses • Green Schools Travel • Residential Travel Planning • Small Public Service Vehicles • Late Night Transport • Walking and Cycling at Night • Accessible Infrastructure • Travel Information • Inclusivity • Equality Assessment • Enforcement of Road Traffic Laws				
Commentary: *The Integration and Improvement Measures would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).* *As identified in the Strategy, the ability of people to change seamlessly from one mode to another – walking to the bus; cycling to the train station; changing from one bus to another – is critical. The features of a well-integrated transport system include the physical environment of stops and stations; the length and quality of the walk between services; crossing points; travel information; fares integration; cycle parking; shelter; frequency and capacity of connecting services. Transport Integration also encompasses the manner in which the public transport, pedestrian and cycling networks link to other major facilities such as major rail stations, Dublin Port and Dublin Airport. Finally, Transport Integration relates to the fact that the transport system operates in the context of wider social and cultural norms prevalent in the city region. The manner in which service providers and infrastructure respond to the wide variety of needs across all sectors of society is a central consideration.* *The development of a well-integrated system, including with the development of park and ride facilities, together with parking management, and interchanges, would help to facilitate increased use of more sustainable modes of transport and associated positive environmental effects (SEOs A, C and PHH).* *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.*				

8.5.4 Walking, Accessibility and Public Realm (Chapter 10)

	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
The Design Manual for Urban Roads and Streets (DMURS) of the Department of Transport, Tourism and Sport and the Department of Environment, Community and Local Government sets out, *inter alia,* how our road and street network should be designed in order to serve the needs of pedestrians. This chapter of the Strategy does not seek to repeat the principles	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

of DMURS but to set out the relevant measures that will be implemented across the GDA by the NTA in conjunction with the local authorities over the period of the Transport Strategy. These measures include those addressing the following topics: • Steady State Maintenance of Footpaths • Improved Footpaths • Improved Junctions • Crossing Times • Crossing Points • Wayfinding • Pedestrianisation • Pedestrians with Mobility Impairments				

Commentary:

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

As identified in the Strategy, walking is an important mode of travel, accounting for 18% of trips to work and education in the GDA in 2016, and 13% of trips to work in Dublin. In addition, most people who travel are pedestrians for some part of their journey, and adequate provision for pedestrians is therefore a matter of general relevance. A high-quality walking network should be safe, coherent, direct, attractive and comfortable. However, in both urban and rural areas, it is often not of a standard that meets the needs of all users.

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 urban areas; 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 developing these lands 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 Cycling and Personal Mobility Devices (Chapter 11)

	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
Network Planning, Infrastructure Design, Cycle Parking and Bike Share Schemes are all key elements of a comprehensive, inclusive, cycle-friendly environment, and this chapter sets out the objectives of the NTA up to 2042 under these programme headings. Measures addressing the following issues are provided: • GDA Cycle Network • Cycle Infrastructure Design • Cycle Parking • Cycle Parking Strategies • Bike Share Scheme Expansion • Bike Share Scheme Electrification • Interoperability between Bike Schemes • Bikes on Public Transport • Pedal Assisted E-Bikes • Electric Scooters • Other Emerging Personal Mobility Modes	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

Commentary:

The Cycling and Personal Mobility Devices Measures would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, many challenges have emerged in providing the step-change in the quality of cycling infrastructure required to serve continued growth in cycling. While there has been a number of high-quality schemes delivered across the region, such as along sections of the canals and on some key radial routes, the requirement to deliver a coherent network linking origins and destinations and catering for trips within communities and to schools remains. The need to deliver this comprehensive network has become even more apparent during the Covid-19 pandemic.

In 2013 the NTA published the Greater Dublin Area Cycle Network Plan. The purpose of the Plan was to guide investment in cycle infrastructure by the NTA and other related agencies, by developing a network of cycle routes for the GDA. The route network comprises Primary, Secondary, Feeder, Greenway and Inter-urban routes for the region, including dedicated town networks for all settlements. While the 2013 Plan has provided a robust framework for such investment to date, evolutions in cycle policy, design guidance and urban form since its publication have prompted an update of the network. This review has ensured that the network proposed is fit for purpose, and takes account of the needs of the full spectrum of users and trip types. The revised GDA Cycle Network forms part of the Transport Strategy and is published in full alongside this report. The revised network forms a key component of the overall transport network for the region. Covering the full GDA region, it sets out a comprehensive cycle network for development during the period of the Transport Strategy. Development of the network would be likely to result in a series of long lasting positive environmental effects, including those on environmental topics including sustainable mobility, accessibility to public assets and infrastructure, air and climatic factors, landscape and cultural heritage. Potential disturbance of archaeological resources during scheme development will generally be mitigated by preservation in-situ where possible and preservation by recording.

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.*

The development of these 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 and along the coast. 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.

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 Chapter 7.4.1 of the Strategy, the alignments and details of proposed transport projects set out in the Transport Strategy, unless already provided for by plans or proposals 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 18.

The development of cycle networks in combination with the electrification of lines at Rogerstown and Malahide Estuary could potentially present a collision risk to bird species for which these sites are designated (SEO BFF). 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 sites[53]. 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.*

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 urban areas; 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 developing these lands 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.

8.5.6 Public Transport (Chapter 12)

	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
Chapter 12 sets out the strategy for the implementation of an overall public transport system for the region. Central to that overall provision is the delivery of a comprehensive bus network in the short-term based on significantly enhanced levels of service supported by much greater on-street priority. In the short-term there are also a number of rail lines that will be pursued such as Metrolink and the DART+ programme. Towards the medium and long term, a number of Luas lines which have been planned for many years, together with other rail projects, will be progressed according to forecast demand. During this period, those bus corridors where demand for travel exceeds that which can be served by high frequency bus services, will have their passenger carrying capabilities	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

[53] 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.

increased by transitioning to higher capacity bus systems which will be implemented on an incremental basis. As identified in the Strategy, the alignments and details of proposed transport projects set out in the Transport Strategy, unless already provided for by plans or proposals 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 18. 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. Overarching measures addressing the following issues are included: Steady-State Maintenance of Public Transport; Climate Proofing New Public Transport Infrastructure; and Resilience of the Public Transport Services. Bus measures addressing the following issues are provided: Core Bus Corridor Programme; Additional Radial Core Bus Corridors; Orbital Core Bus Corridors; New Dublin Area Bus Service Network; Bus Service Network Monitoring and Review; Higher Capacity Bus Fleet; Zero Emission Bus Fleet for Dublin; Regional and Intercity Coach Fleet; Bus Livery; New Bus Stops and Shelters; Regional Core Bus Corridors; Bus Priority in Towns and Villages; Connecting Ireland; Regional and Rural Bus Services; and Local Link and Demand Responsive Transport Light Rail measures addressing the following issues are provided: Metrolink; Luas Finglas; Luas Lucan; Luas Bray; Luas Poolbeg; Post-2042 Luas Lines; Orbital Luas; Luas Green Line; New Light Rail Stops; Enhance Priority for Trams; Additional Depot Facilities; and Improved Security on Light Rail. DART+ and Rail measures addressing the following issues are provided: DART+; DART+ Tunnel; DART+ Extension; Navan Rail Line; Regional and Intercity Services; New Rail Stations; Station Upgrades; National Train Control Centre; and Security of Rail System.				
Commentary: *The Public Transport Measures would contribute towards the achievement of the selected alternative investment scenario 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.* *As identified in the Strategy, the alignments and details of proposed transport projects set out in the Transport Strategy, unless already provided for by plans or proposals 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 18. 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 urban areas; 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 developing these lands 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.

Specific Commentary on Bus

The provisions relating to bus transport 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.

Upgrading to BusConnects standards including more Real Time Passenger Information (RTPI), systems to prioritise public transport movements at signalised junctions, provision of new footpaths, bus shelter provision, smart ticketing, connections to other modes and transition to a low emission fleet 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 S1);*
- *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 and is being subject to EIA.

Specific Commentary on Light Rail

It is intended to seek planning consent for MetroLink in early 2022 and, subject to receipt of approval, to proceed with the construction of the project. The Luas network provided for in the Transport Strategy can be categorised in the following manner:

- *Existing lines;*
- *Lines to be delivered by 2042 (Finglas, Lucan, Bray and Poolbeg); and*
- *Lines to be delivered after 2042 (City Centre to Clongriffin; City Centre to Beaumont and Balgriffin; Green Line Extension to Tyrellstown; City Centre to Blanchardstown; Red Line Reconfiguration to provide the following lines - Clondalkin-City Centre and Tallaght-Kimmage-City Centre; Tallaght to City Centre via Knocklyon; Green Line Reconfiguration to provide the following lines - City Centre to*

Bray via UCD and Sandyford and Sandyford to City Centre).

The light rail projects would provide additional, high capacity, public transport services. The reliability, speed and frequency of light rail (which derive, in part, from a high degree of segregated running) enable it to secure a modal shift from private car use to public 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.*

Investment in light rail would also 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.

Potentially adverse environmental effects of constructing and operating light rail include:

- *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 (SEO PHH).*

Light Rail, including Metrolink and Luas, is already provided for by the National Planning Framework and associated National Development Plan (Project 2040) and the Regional Spatial and Economic Strategy and is being subject to EIA. Identified residual adverse effects for projects such as Metrolink include land take/impacts upon certain open spaces, temporary loss of habitat during construction, temporary disturbance to a range of common fauna species during construction and small areas of permanent habitat loss to accommodate above ground structures such as air vents and emergency accesses.

Specific Commentary on DART+ and Rail

The further development of the DART+ Programme (previously named DART Expansion) and rail network, including a new rail line to Navan, the electrification of various lines, the construction of additional train stations, the new train control centre, the upgrading of existing stations and upgrading the fleet, 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 and PHH):

- *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.*

Implementation of the DART+ would improve the status of SEOs relating to sustainable mobility and associated interactions (SEOs A, C, PHH and MA). Although this measure would facilitate net reductions in emissions to air (noise), intensifying the use of existing infrastructure would be likely to result in increases at local level (SEOs A and PHH).

Development arising from DART+ and rail measures – including the electrification of heavy rail 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 (see Section 9).

The DART+ Tunnel project is an updated version of DART Underground which received planning consent in 2010. This scheme was not brought forward at that time, primarily due to funding constraints and also due to the potential to utilise the Phoenix Park Tunnel for passenger service. Since then, the Phoenix Park Tunnel link has been brought into operational service, providing connectivity from the Kildare line to the city centre stations of Connolly, Tara and Pearse. In addition, the NTA and Irish Rail have reviewed the tunnel project in order to further optimise its potential and ensure that its progress would deliver the maximum benefits for transport in the city-region. The NTA are satisfied that, in the longer term, but within the lifetime of the Transport Strategy, the requirement for an additional heavy rail line through Dublin City Centre will arise. As such, the DART+ Tunnel will be progressed for delivery at a point after the completion of the current DART+ Programme.

A new train control centre would facilitate intensification of use of heavy rail infrastructure thereby improving the status of SEOs relating to sustainable mobility and associated interactions (SEOs A, C, PHH and MA).

The construction of additional train stations in developing areas with sufficient demand would facilitate intensification of use of public transport thereby improving the status of SEOs relating to

sustainable mobility and associated interactions (SEOs A, C, PHH and MA).

Upgrading and enhancing train stations would contribute towards the attractiveness and capacity of public transport thereby improving the status of SEOs relating to sustainable mobility and associated interactions (SEOs A, C, PHH and MA). Upgrading and enhancing certain structures could potentially conflict with the protection of environmental components including architectural heritage (CH) and relevant mitigation measures would have to be complied with (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 the DART expansion, both directly and in-combination with similar potential impacts arising from the GDA Cycle Network– such impacts would be mitigated by measures, including those which have been integrated into the Strategy.

The development of overhead power lines associated with the electrification of rail infrastructure at Rogerstown and Malahide Estuary could potentially present a collision risk to bird species for which these sites are designated (SEO BFF). 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 sites[54]. 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.*

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 provisions would contribute towards reductions in emissions to air including noise, an increase noise levels could be experienced at specific locations (SEOs A and PHH). Upgrading and enhancing certain stations could potentially conflict with the protection of environmental components including architectural heritage (SEO CH).

8.5.7 Roads (Chapter 13)

	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
Roads measures addressing the following issues are provided: • Principles of Road Development • National Roads Requirements • National Roads Projects • Lands Reserved for the Eastern Bypass • Southern Port Access Route • Catering for Orbital Movement in Leinster • Dublin Tunnel Emergency Diversion Route • Emergency Diversion Routes • Regional and Local Roads Policy • Urban Roads and Streets	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		
Commentary: *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 Eastern and Midland Regional Spatial and Economic Strategy. Further consideration will need to be given to all proposals.*				

[54] 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.

The Public Transport Measures would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, the first priority for road investment will be the expenditure required to maintain, renew, manage and operate the extensive roads and associated infrastructure in the GDA. It is also proposed to undertake a limited number of new projects.

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.

The Principles of Road Development within the Greater Dublin Area 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.

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 and town 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.

Potentially adverse environmental effects of constructing and operating roads, including road widening and improved road infrastructure, include:

- *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 S1) 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).*

It is noted that, given the above Principles of Road Development and Government policy related to reducing transport's contribution to emissions (SEOs A, C and PHH), the Leinster Orbital Route (an orbital road proposal extending from Drogheda to the Naas/Newbridge area with intermediate links to Navan and other towns) is not be progressed under the Strategy in its existing form. Instead, the Strategy proposes to provide online, or mainly online, improvements to the existing road network and carriageways to cater for orbital demand along these corridors.

It is also noted that the Eastern Bypass scheme (an extension of the M50 from the Dublin Tunnel to Sandyford completing a full orbital motorway around Dublin), taking account of current transport policies, is no longer required to be developed. Accordingly, it is not intended to progress this project as part of the 2022 Strategy. Subject to the retention of a corridor reservation for the South Port Access Route (detailed later), the lands reserved for this scheme in the Dublin City Development Plan, Poolbeg Strategic Development Zone Planning Scheme and Dún Laoghaire Rathdown County Development Plan can be released for development– thereby facilitating compact growth of the City (SEOs A, C, PHH, BFF, S, W and M). As identified in the Strategy, the NTA is of the view, that the lands reserved in the Dún Laoghaire Rathdown County Development Plan for this scheme from the Stillorgan Road to Sandyford should be reserved, pending the outcome of an assessment for its potential use as a transport corridor accommodating sustainable transport modes (SEOs A, C, PHH and M).

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 urban areas; 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 developing these lands would be mitigated by environmental requirements, including those contained within the relevant land use plans.

As identified in Chapter 7.4.1 of the Strategy, the alignments and details of proposed transport projects set out in the Transport Strategy, unless already provided for by plans or proposals 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 18.

8.5.8 Traffic Management and Travel Options (Chapter 14)

	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
In advance of setting out the various strands of investment in the individual modes of transport, this chapter addresses the way in which the NTA will continue to develop these strands into a seamless and inclusive transport network across the GDA over the coming years. Measures addressing the following issues are provided: • Management of Dublin City Centre • Management of Urban Centres • Reduced Speed Limits • Variable Speed Limits • Low-Traffic Neighbourhoods • Car-Free Zones • Home Zones • Safe Routes to School • Car Sharing • Car Free Residential Developments • Residential Parking Standards • Destination Parking Standards • Dublin City Centre Parking Standards • Parking at Major Interchanges and Mobility Hubs • Public Sector Parking in Dublin City Centre • Parking at Out-Of-Town Retail Developments • On-Street Parking • Electric Vehicles • Motorcycles and Mopeds • Connected and Autonomous Vehicles	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

Commentary:

The Traffic Management and Travel Options Measures would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, the main objective of Traffic Management is to ensure that the regional transport system continues to operate in an efficient manner, i.e., that the movement of people by public transport, walking and cycling, and the movement of goods, is not adversely affected by private car traffic, and that the impacts of traffic congestion can be minimised. Measures which confer an advantage on sustainable modes can help meet this objective. Many of these are set out in the Walking, Cycling and Public Transport sections of the strategy, but those aimed specifically at managing private vehicular traffic are included here. This chapter sets out a broad range of measures that aim to manage the transport supply network in a way which places sustainable modes at the top of the hierarchy and which seek to rebalance the cost of travel (in its broadest sense) towards these modes.

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.*

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.

8.5.9 Freight, Delivery and Servicing Provisions (Chapter 15)

	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
This Chapter sets out the Strategy's key areas of concern for Freight, Delivery and Servicing, which inter alia, it is recommended, should be informed, in their formulation and implementation, by the preparation of a Strategy for Sustainable Freight Distribution. Measures are included under the following headings: • Strategy for Sustainable Freight Distribution • Planning Policy and Freight • HGV Management • Rail Freight • Construction Logistics Centres • Consolidation Centres • Environmental Measures for Freight	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		

Commentary:

The Freight, Delivery and Servicing Provisions would contribute towards the achievement of the selected alternative investment scenario for the Strategy and associated environmental effects and interactions (see evaluation at Section 7 of this report).

As identified in the Strategy, the National Planning Framework growth projections and the associated demand for new homes; continued economic growth and opportunities; as well as the provision of community infrastructure such as schools, will all combine to result in the increased need for freight movement in the GDA. 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 and reconcile with demand / demand patterns and operational requirements associated with other modes and journey purposes (SEOs A, C, PHH and MA).

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.

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.

8.5.10 Climate Action Management (Chapter 16)

	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
This Chapter sets out the additional demand management measures that will need to be put in place to complement the additional transport provision and achieve the overall 51% reduction goal in such emissions over the period to 2030, relative to a baseline of 2018. The following two measures are included: 1. Additional demand management measures to achieve the GDA transport emissions target for 2030 will be implemented. The NTA will undertake a detailed assessment to establish the optimal framework of demand management measures, which is likely to include parking restraint, zonal charging, additional tolling / road pricing and/or further vehicle electrification. 2. Through the implementation of the full measures set out in this strategy, in combination with the plans and programmes of Government, the NTA will contribute to a reduction in CO2 emissions from transport in the GDA to below 1 $MtCO_2eq$ by 2042.	**A C PHH BFF MA S W L CH**	**A C PHH BFF MA S W L CH**		
Commentary: *The Strategy aims to provide an effective and sustainable transport system across the region and to accommodate future travel growth in a managed and balanced way. Increased public transport provision, coupled with enhanced cycling and walking facilities in the urban areas, will enable a transition to more sustainable travel modes for many people in addition to providing the means to cater for much of the increased travel demand. However, without complementary demand management measures the full benefits of the Strategy will not be achieved.* *In addition, there is now a legislative requirement that public bodies must take account of the Climate Action Plan and Low Carbon Development (Amendment) Act 2021 in the performance of their functions. Specifically in relation to greenhouse gas emissions, the Act requires a total reduction of 51% in such emissions over the period to 2030, relative to a baseline of 2018. While that overall target has not yet been disaggregated into sectoral targets, it is understood that the transport sector will be required to achieve this 51% reduction in full.* *This is a very significant and challenging target, which will require fundamental changes in the area of transport over the next decade. Central to those changes will be the need to increase the proportion of travel by sustainable modes and reduce the level of usage of Internal Combustion Engine (ICE) powered vehicles.* *Achieving such a rate of reduction in the GDA is even more challenging as the 2018 baseline figure reflects an already high mode share for sustainable modes compared to the rest of Ireland and the fact that trips in the GDA, in particularly Metropolitan Dublin, even when undertaken by car, are comparatively shorter and therefore emit less CO_2.* *While the provision of new and additional transport infrastructure and transport services will encourage and deliver increased movement by sustainable modes, such provision will be insufficient on its own to achieve the level of emissions reduction required by 2030. Accordingly, additional demand management measures will need to be put in place to complement the additional transport provision and achieve the overall 51% reduction goal. The provisions in this section set out the additional measures that will need to be adopted, thereby contributing towards the meet emissions targets.*			

Chapter 18 "Environmental Assessment" provides mitigation measures that are reproduced under Section 9 below.

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), Eastern and Midland Regional Spatial and Economic Strategy and the Statutory land use plans of planning authorities across the Strategy area.

The Strategy's Aim[55] and Objectives[56], to which sustainable development and environmental protection and management are central, provide the basis for its detailed provisions.

[55] To provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth.

[56] **An Enhanced Natural and Built Environment**
To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.
Connected Communities and Better Quality of Life
To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
A Strong Sustainable Economy
To support economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to, and facilitating the efficient movement of goods.
An Inclusive Transport System
To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

9.3 Consideration of alternatives

Accommodating the scale of the growth provided for the Greater Dublin Area in other policies and plans would mean increasing pressure on the existing transport network. The Strategy was developed and assessed in the context of three notional Investment Scenarios as follows:

- Scenario 1: Business as Usual Scenario that incorporates committed investment in the road network and public transport only;
- Scenario 2: Improvements to Public Transport and Sustainable Travel – scenario this substantially increases public transport investment; and,
- Scenario 3: Improvements in Public Transport and Sustainable Travel, with complimentary Demand Management Measures – this scenario has elements of Scenario 2 but with the addition of demand management measures to influence the choice of travel.

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
7.4.1 Environmental Assessment	The alignments and details of proposed transport projects set out in the Transport Strategy, unless already provided for by plans or proposals 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 18.
16. Climate Action Management	**Climate 1** Additional demand management measures to achieve the GDA transport emissions target for 2030 will be implemented. The NTA will undertake a detailed assessment to establish the optimal framework of demand management measures, which is likely to include parking restraint, zonal charging, additional tolling / road pricing and/or further vehicle electrification. **Climate 2** Through the implementation of the full measures set out in this strategy, in combination with the plans and programmes of Government, the NTA will contribute to a reduction in CO2 emissions from transport in the GDA to below 1 $MtCO_2eq$ by 2042.
18. Environmental Protection and Management	**Introduction** 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.
18. Environmental Protection and Management	**Regulatory Framework for Environmental Protection and Management** 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.
18. Environmental Protection and Management	**Lower-level Decision Making** 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: • 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; • Architectural Conservation Areas; and • Relevant landscape designations.
18. Environmental Protection and Management	**Corridor and Route Selection Process** The following Corridor and Route Selection Process will be undertaken for relevant new infrastructure: Stage 1 – Route Corridor Identification, Evaluation and Selection • 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. Stage 2 – Route Identification, Evaluation and Selection • 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;

Strategy Section No.	SEA/AA Recommended Text
	• 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.
18. Environmental Protection and Management	**Appropriate Assessment** 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: • 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.
18. Environmental Protection and Management	**Protection of Natura 2000 Sites** 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)[57].
18. Environmental Protection and Management	**Climate Change, Emissions and Energy** As identified in the SEA Environmental Report that accompanies this Strategy, the Strategy facilitates sustainable mobility and associated positive effects, including those relating to: • 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. In implementing the Strategy, the Authority will support relevant provisions contained in the National Energy and Climate Plan, the Climate Adaptation Strategies of planning authorities within the Greeter Dublin Area, the Climate Action Plan (2019), National Climate Change Adaptation Framework (2018), the National Mitigation Plan (2017) and the Department of Transport's Sectoral Adaptation Plan for Transport Infrastructure, which builds on the 2017 "Adaptation Planning – Developing Resilience to Climate Change in the Irish Transport Sector". 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. During the preparation and/or review of policies and plans relating to climate charge, carbon emissions and energy usage, the Authority will seek to integrate Strategy objectives, as appropriate.
18. Environmental Protection and Management	**Other SEA/AA Recommendations** In implementing the Strategy, the Authority will ensure that the measures included in Table 9.2 of the SEA Environmental Report are complied with.

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.

[57] 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.

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	**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: 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	**Maintenance Plan** Lower tier assessments should examine the need for Maintenance Plans informed by environmental considerations to be prepared and implemented.
Air and Climatic Factors	Emissions to air and associated issues	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 16.
		Air and Energy 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 for the Dublin Agglomeration and surrounding parts of the Strategy area (including provisions relating to the preservation of Quiet Areas); and reductions in energy usage.
		Climate Adaptation and Resilience Improve resilience and adaptation to climate change by taking into account issues including the following in the siting and deign of projects: • 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 flooding; and • Extreme temperatures and associated implications including those relating to the operation of transport and ancillary infrastructure and services.
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.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
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 transport corridors) and displacement of protected species and/or coastal squeeze. - Effects in riparian zones where new crossings of waters, if any, are progressed. - Potential effects on vegetation from transport emissions.	**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); UNESCO World Heritage and UNESCO Biosphere sites; Ramsar Sites; 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): • EU Directives, including the Habitats Directive (92/43/EEC, as amended)[58], the Birds Directive (2009/147/EC)[59], the Environmental Liability Directive (2004/35/EC)[60], 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)[61] 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 2004 and the 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 any superseding version of same). • 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.
		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 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 zone.
		Biodiversity and Ecological Networks Contribute towards the protection and enhancement of biodiversity and ecological connectivity, including 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.
		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 areas, as appropriate.

[58] Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).
[59] Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).
[60] Including protected species and natural habitats.
[61] Including protected species and natural habitats.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
		Biodiversity including non-designated biodiversity Ensure the undertaking of appropriately detailed surveying and assessment at project/EIA level and minimisation of loss of biodiversity, including old trees or tree lines or areas of vegetation, 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[62] 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, thereby contributing towards the protection of amenity and the protection of light sensitive species such as bats.
		Non-native invasive species Support, as appropriate, the National Parks and Wildlife Service'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.
Material Assets	- 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	- 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	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.

[62] 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
	- Increase in the risk of flooding	**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 Areas and Seascapes Contribute towards the protection of landscape character and the visual potential of the coast 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.
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). 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 of the Department of Arts Heritage and the Gaeltacht 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.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
Soil	- 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 Plan, 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 Plan.

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 Eastern and Midland 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 Draft Strategy will form 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 Eastern and Midland 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.

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:

- 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**	• Proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • NO_x, SO_x, PM10 and PM2.5 as part of Ambient Air Quality Monitoring	• Decrease in proportion of journeys made by private fossil fuel-based car compared to previous National Travel Survey levels • Improvement in Air Quality trends, particularly in relation to transport related emissions of NO_x and particulate matter	• CSO data • Data from the National Travel Survey • EPA Air Quality Monitoring • Internal review of Strategy implementation	• 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**	• Implementation of the Strategy, which will contribute towards and facilitate climate action	• To implement the Strategy, which will contribute towards and facilitate climate action	• 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	• 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 Council will liaise with the Regional Assembly and the Dublin Climate Action Regional Office to establish reasons and develop solutions.
		• A competitive, low-carbon, climate-resilient and environmentally sustainable economy	• Contribute towards transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050		
		• Share of renewable energy in transport	• 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		
		• Carbon dioxide (CO_2) emissions across the transport sector	• Contribute towards the target of aggregate reduction in carbon dioxide (CO_2) emissions of at least 80% (compared to 1990 levels) by 2050 across the transport sector		
		• Energy consumption, the uptake of renewable options and solid fuels for residential heating	• To promote reduced energy consumption and support the uptake of renewable options and a move away from solid fuels for residential heating		
		• Proportion of journeys made by private fossil fuel-based car compared to previous levels	• Decrease in the proportion of journeys made by residents of the County using private fossil fuel-based car compared to previous levels		
		• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures	• Increase in the proportion of people reporting regular cycling / walking to school and work above previous CSO figures		

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Population and Human Health	**PHH**	• Implementation of the Strategy, which will contribute towards and facilitate economic growth	• To implement the Strategy, which will contribute towards and facilitate economic growth	• Internal review of Strategy implementation • Consultations with the Health Service Executive and EPA • CSO data • Internal review of Strategy implementation	• 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
		• Number of spatial concentrations of health problems arising from environmental factors resulting from development permitted under the Strategy	• No spatial concentrations of health problems arising from environmental factors as a result of implementing the Strategy		
		• Proportion of people reporting regular cycling / walking to school and work above previous CSO figures • Access to sustainable modes of transport	• 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**	• Condition of European sites	• 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	• 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	• 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
		• Number of projects that have integrated ecosystem services considerations			
		• EIAs and AAs as relevant for new projects	• Screen for and undertake EIA and AA as relevant for new projects		
		• Compliance of planning permissions with Strategy measures providing for the protection of biodiversity and flora and fauna – see Chapter 18 of the Strategy	• 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 18 of the Strategy		

Environmental Component	SEO Code	Indicators	Targets	Sources	Remedial Action
Water	**W**	• Status of water bodies as reported by the EPA Water Monitoring Programme for the WFD • Number of incompatible developments permitted within flood risk areas • Integration of sustainable water management solutions (such as SuDS, porous surfacing, etc.) into new projects	• 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	• EPA Monitoring Programme for WFD compliance • Internal review of Strategy implementation	• 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**	• 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	• 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	• Internal review of Strategy implementation •	• 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**	• 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	• 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	• Internal review of Strategy implementation • Consultation with Department of Housing, Local Government and Heritage	• 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)	• 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.	• Carry out and 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)	• 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.	• 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)	• 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.	• 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)	• 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.	• 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)	• Reducing water pollution caused or induced by nitrates from agricultural sources and – preventing further such pollution.	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: • 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

Legislation, Plan, etc.	Summary of high-level aim / purpose / objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
			achievement of the objectives of the regulatory framework for environmental protection and management.
EU Integrated Pollution Prevention Control Directive (2008/1/EC)	• 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.	The IPPC Directive is based on several principles: • an integrated approach • best available techniques, • flexibility; and • public participation	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 Plant Protection (products) Directive 2009/127/EC	• 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).	• 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.	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 Renewables Directive (2009/28/EC)	• 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.	• 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.	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.
Indirect Land Use Change Directive (2012/0288 (COD))	• 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.	• 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.	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.
Alternative Fuels Infrastructure Directive (2014/94/EU)	• 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.	• 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.	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 Energy Efficiency Directive (2012/27/EU)	• 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.	• 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	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

Legislation, Plan, etc.	Summary of high-level aim / purpose / objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
		on at least 3% (by floor area) of the buildings they own and occupy • 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.	achievement of the objectives of the regulatory framework for environmental protection and management.
EU Seveso Directive (2012/18/EU)	• 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.	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: • 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	• 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.	• Outlines six targets and twenty actions to aid European Union in halting the loss to biodiversity and eco-system services. • The six targets cover: o Full implementation of EU nature legislation to protect biodiversity o Maintaining, enhancing and protecting for ecosystems, and green infrastructure o Ensuring sustainable agriculture, and forestry o Sustainable management of fish stocks o Reducing invasive alien species o 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.	• 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	• 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.	• 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.	The Convention has three main goals: • 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

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			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 Kyoto Protocol (2nd Kyoto Period), the Second European Climate Change Programme (ECCP II), Paris climate conference (COP21) 2015 (Paris Agreement)	The UN Kyoto Protocol set of policy measures to reduce greenhouse gas emissions. 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. 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.	• The Kyoto Protocol is implemented through the European Climate Change Programme (ECCP II). • EU member states implement measures to improve on or compliment 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.	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 2020 Climate and Energy Package	• 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.	Four pieces of complimentary legislation: • 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.	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 2030 Framework for Climate and Energy	• 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.	To meet the targets, the European Commission has proposed the following policies for 2030: • 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.	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 Clean Air for Europe Directive (2008/50/EC) **(EU Air Framework Directive)** **Fourth Daughter Directive (2004/107/EC)**	• 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 (PM_{10}) or up to five years (NO_2, 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.	• 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.	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 Directive (2002/49/EC)	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.	The Directive requires competent authorities in Member States to: • 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. 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.	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.
Floods Directive (2007/60/EC)	• Establishes a framework for the assessment and management of flood risks • Reduce adverse consequences for human health, the environment,	• 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	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-

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	cultural heritage and economic activity associated with floods in the Community	flooding and assets and humans at risk in these areas at River Basin District level (Article 3(2) (b)) and areas covered by Article 5(1) and Article 13(1) (b) in accordance with paragraphs 2 and 3. • 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.	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 Framework Directive (2000/60/EC)	• 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: o The Drinking Water Abstraction Directive o Sampling Drinking Water Directive o Exchange of Information on Quality of Surface Freshwater Directive o Shellfish Directive o Freshwater Fish Directive o Groundwater (Dangerous Substances) Directive o Dangerous Substances Directive	• 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)	• 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.	• 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)	• 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.	• 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)	• 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.	• 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	• Establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage.	• 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	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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		of such damage occurring, the operator shall, without delay, take the necessary preventive measures. • 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.	other users and bodies and their plans etc. – the achievement of the objectives of the regulatory framework for environmental protection and management.
European Convention on the Protection of the Archaeological Heritage (Valletta 1992)	• 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)	• 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.	• 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')	• 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.	• (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)	• 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.	• 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	• 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	• 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-

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	more general level, changes in the world economy, have in many cases 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.		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 Seventh Environmental Action Programme (EAP) of the European Community (2013-2020)	It identifies three key objectives: • 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): • 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: • 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: • 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: • 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 Caucus. • 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: • 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: • 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: • 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.	• 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	• 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.	• 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)	• Aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances.	The aims are achieved by applying REACH, namely: • Registration, • Evaluation, • Authorisation; and • Restriction of chemicals. REACH also aims to enhance innovation and competitiveness of the EU chemicals industry.	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	• The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants.	• 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".	Under the "three pillars" of the Convention, the Contracting Parties commit to: • 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	Europe 2020 sets out a vision of Europe's social market economy for the 21st century and puts forward three mutually reinforcing priorities: • 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.	In order to reach these priorities, the Commission proposes five quantitative targets to fulfil by 2020: 1. 75 % of the population aged 20-64 should be employed; 2. 3% of the EU's GDP should be invested in R&D; 3. the "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right); 4. the share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree; 5. 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.	• 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

Legislation, Plan, etc.	Summary of high-level aim / purpose / objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
			framework for environmental protection and management.
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: • 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.	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: • 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			
Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020 (2009)	• Outlines a policy for how a sustainable travel and transport system can be achieved. • Sets out five key goals: o To reduce overall travel demand. o To maximise the efficiency of the transport network. o To reduce reliance on fossil fuels. o To reduce transport emissions. • To improve accessibility to transport.	• Others lower level aims include: o reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment o ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking o improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies strengthening institutional arrangements to deliver the 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.
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	• 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.	The three priorities stated in SFILT are: • 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. In delivering on the steady state maintenance objective set out in SFILT, the Plan includes for: • 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' 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	• 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	• Sets a target where 10% of all journeys will be made by bike by 2020 Proposes the planning, infrastructure, communication, education and stakeholder participations measures required to implement the initiative	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	• 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.	Targets for alternative fuel infrastructure include the following: • 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)	• 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.	National Strategic Outcomes as follows: 1. Compact Growth 2. Enhanced Regional Accessibility 3. Strengthened Rural Economies and Communities 4. Sustainable Mobility 5. A Strong Economy, supported by Enterprise, Innovation and Skills 6. High-Quality International Connectivity 7. Enhanced Amenity and Heritage 8. Transition to a Low-Carbon and Climate-Resilient Society 9. Sustainable Management of Water and other Environmental Resources 10. 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	The PLUTO seeks to: 1. Quantify in broad terms the appropriate scale of financial investment in land transport over the long term; 2. Consider how fiscal, environmental and technological developments might impact on this investment; and, 3. Identify strategic priorities for future investment to ensure land transport infrastructure provision facilitates the objectives of Project Ireland 2040.	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 and Development Act 2000 (as amended)	• 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.	• 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.	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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		• 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.	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	• 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.	• 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)	• 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.	• 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	• 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.	• 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)	• The purpose of these Regulations is to support the achievement of favourable conservation status for freshwater pearl mussels	• 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. No. 366 of 2016)	• 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 and of the Council on the protection of groundwater against pollution and deterioration.	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. • Part A of Schedule 6 has been amended to include changes to the rules governing 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.	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 (Good Agricultural Practice for Protection of Waters) Regulations 2014 (S.I.	• 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	The Regulations include measures such as: • Periods when land application of fertilisers is prohibited • Limits on the land application of fertilisers	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-

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No. 31 of 2014)		• Storage requirements for livestock manure; and • Monitoring of the effectiveness of the measures in terms of agricultural practice and impact on water quality.	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 Action and Low Carbon Development Act 2015	• 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.	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: • 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 • The most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency.	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)	• 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.	The Plan identifies four strategic priorities to guide implementation: • 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)	• €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.	• 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).	• 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)	• 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.	• 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

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			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 Renewable Energy (2012-2020)	• 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.	This document sets out five strategic goals, reflecting the key dimensions of the renewable energy challenge to 2020: • 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.	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.
Governments White Paper 'Ireland's Transition to a Low Carbon Energy Future' (2015 – 2030)	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.	2030 will represent a significant milestone, meaning: 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.	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 Position on Climate Action and Low Carbon Development (2014)	• 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.	National climate policy in Ireland: • 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.	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 Action and Low Carbon Development Act 2015 (and Amendment Bill 2021)	• 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. • The Climate Action and Low Carbon Development (Amendment) Bill 2021 seeks to amend the principle Act of 2015 (outlined below) by reinforcing Ireland's transition to Net Zero and achieve its commitment to a climate neutral economy by no later than 2050. It establishes a legally binding framework with clear targets and commitments set in law, and ensure the necessary structures and processes are embedded on a statutory basis to ensure Ireland achieves its national, EU and international climate goals and obligations in the near and long term.	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: • 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 The most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency.	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 Clean Air Strategy [in preparation]	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.	• 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 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.	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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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; "*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.*"	• 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	• 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.	Key conclusions of the study: • 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 CO_2 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)	• 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.	• 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 [in preparation]	• 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.	The key objectives of the plan are to: • 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: *"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."*	General development and growth objectives of marine and freshwater aquaculture (2014 – 2020): • 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 products	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.
Construction 2020, A Strategy for a Renewed Construction Sector	• Construction 2020 sets out a package of measures agreed by the Government and is aimed at stimulating activity in the building industry.	This Strategy therefore addresses issues including: • A strategic approach to the provision of housing, based on real and measured needs,	Where new land use developments or activities occur as a result of this legislation, plan, programme, etc.,

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	• 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.	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.	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)	• 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.	• 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)	• 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: *"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."*	The objectives of the National Landscape Strategy are to: • 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	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: • 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.	The revised Plan makes 27 recommendations under the following topics: • 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.
Ministerial Guidelines such as Sustainable Rural Housing Guidelines and Flood Risk Management Guidelines	• 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.	• 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

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			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	• The vision is: *"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."*	These four goals are interlinked, interdependent and mutually supportive: • 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.	• 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)	• White paper setting out a framework for delivering a sustainable energy future in Ireland. • Outlines strategic Goals for: o Security of Supply o Sustainability of Energy o Competitiveness of Energy Supply	The underpinning Strategic Goals are: • 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	• 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	• 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.	Key targets for 2030: • 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.
National Renewable Energy Action Plan (2010)	• 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.	Including Ireland's 16% target of gross final consumption to come from renewables 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

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			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)	• This is the second National Energy Efficiency Action Plan for Ireland.	• 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	Irelands 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**	• The act provides protection and conservation of wild flora and fauna.	• 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	• 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.	• 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 ecosystems 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.
National Broadband Plan (2012)	• Sets out the strategy to deliver high speed broadband throughout Ireland.	The Plan sets out: • 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**	• 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.	• 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.	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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of 2014) **European Communities Environmental Objectives (Surface waters) Regulations of 2009 (SI 272 of 2009)**		• 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.	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)	• Transpose the requirements of the Groundwater Directive 2006/118/EC into Irish Legislation.	• 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	• The Water Pollution Acts allow Local Authorities the authority regulate and supervise actions relating to water in their division.	The Water Pollution Acts enable local authorities to: • 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**	• 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.	Key strategic objectives include: • 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.
Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan (2014-2016)	• 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.	Six strategic objectives as follows: • 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	• Aims to meet nature conservation obligations while having regard to national and local economic, social and cultural needs	• 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

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			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	This 10-year Strategy sets out four high-level "Missions" to be achieved in order to develop such a system in Ireland: 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)**	• 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.	• 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	At a more detailed level, the programme also: • 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.
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: • 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)	• Represents Ireland's proposals for 100% State aid funding for a new Forestry Programme for the period 2014 – 2020.	Measures include the following: • 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	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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		• Innovative Forest Technology • Forest Genetic Reproductive Material • Forest Management Plans	framework for environmental protection and management.
River Basin Management Plan	• The River Basin Management Plan sets out the measures planned to maintain and improve the status of waters.	• 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: • 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 responsible. • 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	• 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: • 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: • 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 bioenergy. • To ensure that bioenergy developments do not adversely impact the environment and its living and non-living 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.
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	Targets for alternative fuel infrastructure include the following: • AFV forecasts • Electricity 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-

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	infrastructure and the uptake of alternative fuels are also included within the scope of the Framework.	• Natural gas (CNG, LNG) targets • Hydrogen targets • Biofuels targets • LPG targets • Synthetic and paraffinic fuels targets	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: • 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: • 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: • 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.
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, (DTTAS, 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; • 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.

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Waterways Ireland Heritage Plan 2016-2020	The overarching aim of the Plan is to: *"Identify and protect the unique waterways heritage and promote its sustainable use for the enjoyment of this and future generations".*	Four objectives of the Plan include the following: • 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: • 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: • 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.	• 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.
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: • 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

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			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: • 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.	• 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 2015-2020 and 2021-2025 (in preparation)	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: • 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			
Eastern and Midland Regional Economic and Spatial Strategy 2019-2031	The Regional Spatial and Economic Strategy provides a long-term strategic planning and economic framework for the Eastern and Midlands Region in order to support the implementation of the National Planning Framework.	The Eastern and Midland Regional Economic and Spatial Strategy includes provisions for its 12 constituent local authorities: Fingal County Council; Dublin City Council; South Dublin County Council; Dún Laoghaire-Rathdown County Council; Louth County Council; Kildare County Council; Meath County Council; Wicklow County Council; Longford County Council; Laois County Council; Offaly County Council; and Westmeath 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.
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 2016-2035, 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: • Bus • Light Rail; • Heavy Rai; • Integration Measures and Sustainable Transport Investment; • Integrated Service Plan; and • Integration and Accessibility.	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.
Greater Dublin Area (GDA) Transport Strategy (2016-2035)	• This Strategy sets out how transport will be developed across the Greater Dublin Area, covering Dublin, Meath, Wicklow and Kildare. • Vision Statement: "The GDA by 2022 is an economically vibrant, active and sustainable international Gateway Region, with strong connectivity across the GDA Region, nationally and worldwide; a region which fosters communities living in attractive, accessible places well supported by community infrastructure and enjoying high quality leisure facilities; and promotes and protects across the GDA green corridors, active agricultural lands and protected natural areas."	Core principles deriving from the strategic vision: • Dublin as the capital city of Ireland and a major European centre shall grow and progress, competing with other cities in the EU, and serving a wide range of international, national, regional and local needs. • The Dublin and Mid-East Regions will be attractive, vibrant locations for industry, commerce, recreation and tourism and will be a major focus for economic growth within the Country. • The GDA, through its ports and airport connections will continue to be the most important entry/exit point for the country as a whole, and as a Gateway between the	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

Legislation, Plan, etc.	Summary of high-level aim / purpose / objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
	• Full SEA and Stage 2 AA have been undertaken on this Strategy.	European Union and the rest of the World. Access to and through the GDA will continue to be a matter of national importance. • Development in the GDA shall be directly related to investment in integrated high-quality public transport services and focused on compact urban form. • Development within the existing urban footprint of the Metropolitan Area will be consolidated to achieve a more compact urban form • Development in the Hinterland Area will be focused on the high-quality integrated growth and consolidation of development in key identified towns, separated from each other by extensive areas of strategic green belt land devoted to agriculture and similar uses.	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: • 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	• 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.	• 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	• 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.	• 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.
Local Economic and Community Plans (LECPs) prepared by Local Authorities within the Strategy area and Local Authorities in adjoining counties	• The overarching vision for each LECP is: "to promote the well-being and quality of life of citizens and communities	• 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.	• 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	Noise Action Plans are prepared in accordance with the requirements of the	The main purpose of Noise Action Plans is to:	Where new land use developments or activities occur

Legislation, Plan, etc.	Summary of high-level aim / purpose / objective	Summary of lower level objectives, actions etc.	Relevance to the Strategy
Local Authorities within the Strategy area and Local Authorities in adjoining counties	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.	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	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	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.	The Climate Change Adaptation Strategies takes on the role as the primary instrument at local level to: • Ensure a proper comprehension of the key risks and vulnerabilities of climate change; • Bring forward the implementation of climate resilient actions in a planned and proactive manner; and • Ensure that climate adaptation considerations are mainstreamed into all plans and policies and integrated into all operations and functions of 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.
Eastern and Midlands Regional 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) over the period 2015-2021.	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 and Dublin: A Breath of Fresh Air / Come Here To Me Dublin 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 or on 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.

Appendix II Further Environmental Baseline Detail

SACs (53) and SPAs (25) sites within 15 km from the Strategy area		
Site Code	**Site Name**	**Sensitive Features**
000006	Killyconny Bog (Cloghbally) SAC	Sensitive features include: raised bog; and degraded raised bog.
000199	Baldoyle Bay SAC	Sensitive features include: tidal mudflats and sandflats; salicornia mud; Atlantic salt meadows; and Mediterranean salt meadow.
000202	Howth Head SAC	Sensitive features include: vegetated sea cliffs; and dry heath.
000204	Lambay Island SAC	Sensitive features include: reefs; vegetated sea cliffs; grey seal; and common seal.
000205	Malahide Estuary SAC	Sensitive features include: tidal mudflats and sandflats; salicornia mud; Atlantic salt meadows; Mediterranean salt meadows; marram dunes; and fixed dunes.
000206	North Dublin Bay SAC	Sensitive features include: tidal mudflats and sandflats; annual vegetation of drift lines; salicornia mud; Atlantic salt meadows; Mediterranean salt meadows; embryonic shifting dunes; marram dunes; fixed dunes; humid dune slacks; and petalwort.
000208	Rogerstown Estuary SAC	Sensitive features include: esturaries; tidal mudflats and sandflats; Atlantic salt meadows; Mediterranean salt meadows; marram dunes; and fixed dunes.
000210	South Dublin Bay SAC	Sensitive features include: tidal mudflats and sandflats; annual vegetation of drift lines; salicornia and other annuals colonising mud and sand; and embryonic shifting dunes.
000391	Ballynafagh Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
000396	Pollardstown Fen SAC	Sensitive features include: fens; petrifying springs; alkaline fens; Geyer's whorl snail; narrow-mouthed whorl snail; and Desmoulin's whorl snail.
000397	Red Bog, Kildare SAC	Sensitive features include: transition mires; and quaking bogs.
000455	Dundalk Bay SAC	Sensitive features include: estuaries; tidal mudflats and sandflats; perennial vegetation of stony banks; salicornia mud; Atlantic salt meadows; and Mediterranean salt meadows.
000582	Raheenmore Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
000679	Garriskil Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
000685	Lough Ennell SAC	Sensitive features include: alkaline fens.
000713	Ballyman Glen SAC	Sensitive features include: petrifying springs; and alkaline fens.
000714	Bray Head SAC	Sensitive features include: vegetated sea cliffs; and dry heath.
000716	Carriggower Bog SAC	Sensitive features include: transition mires.
000717	Deputy's Pass Nature Reserve SAC	Sensitive features include: old oak woodlands.
000719	Glen of the Downs SAC	Sensitive features include: old oak woodlands.
000725	Knocksink Wood SAC	Sensitive features include: petrifying springs; old oak woodlands;and alluvial forests.
000729	Buckroney-Brittas Dunes And Fen SAC	Sensitive features include: oligotrophic waters containing very few minerals; dystrophic lakes; wet heath; dry heath; alpine and subalpine heaths; calaminarian grassland; species-rich nardus grassland; blanket bogs; siliceous scree; calcareous rocky slopes; siliceous rocky slopes; old oak woodlands; and otter.
000733	Vale of Clara (Rathdrum Wood) SAC	Sensitive features include: old oak woodlands.
000770	Blackstairs Mountains SAC	Sensitive features include: wet heath; and dry heath.
000781	Slaney River Valley SAC	Sensitive features include: estuaries; tidal mudflats and sandflats; Atlantic salt meadows; Mediterranean salt meadows; floating river vegetation; old oak woodlands; alluvial forests; freshwater pearl mussel; sea lamprey; brook lamprey; river lamprey; twaite shad; Atlantic salmon; otter; and common seal.
000925	The Long Derries, Edenderry SAC	Sensitive features include: orchid-rich calcareous grassland.
001209	Glenasmole Valley SAC	Sensitive features include: orchid-rich calcareous grassland; molinia meadows; and petrifying springs.
001387	Ballynafagh Lake SAC	Sensitive features include: alkaline fens; Desmoulin's whorl snail; and marsh fritillary.
001398	Rye Water Valley/Carton SAC	Sensitive features include petrifying springs; narrow-mouthed whorl snail; and Desmoulin's whorl snail.
001459	Clogher Head SAC	Sensitive features include: vegetated sea cliffs; and dry heath.

001742	Kilpatrick Sandhills SAC	Sensitive features include: annual vegetation of drift lines; embryonic shifting dunes; marram dunes; fixed dunes; and decalcified dune heath.
001757	Holdenstown Bog SAC	Sensitive features include: transition mires.
001766	Magherabeg Dunes SAC	Sensitive features include: annual vegetation of drift lines; embryonic shifting dunes; marram dunes; fixed dunes; and petrifying springs.
001810	White Lough, Ben Loughs And Lough Doo SAC	Sensitive features include: hard water lakes; and white-clawed crayfish.
001957	Boyne Coast And Estuary SAC	Sensitive features include: estuaries; tidal mudflats and sandflats; annual vegetation of drift lines; Atlantic salt meadows; embryonic shifting dunes; marram dunes (white dunes); and fixed dunes (grey dunes).
002120	Lough Bane And Lough Glass SAC	Sensitive features include: hard water lakes; and white-clawed crayfish.
002121	Lough Lene SAC	Sensitive features include: hard water lakes; and white-clawed crayfish.
002122	Wicklow Mountains SAC	Sensitive features include: oligotrophic waters containing very few minerals; dystrophic lakes; wet heath; dry heath; alpine and subalpine heaths; calaminarian grassland; species-rich nardus grassland; blanket bogs; siliceous scree; calcareous rocky slopes; siliceous rocky slopes; old oak woodlands; and otter.
002141	Mountmellick SAC	Sensitive features include: Desmoulin's whorl snail.
002162	River Barrow And River Nore SAC	Sensitive features include: estuaries; tidal mudflats and sandflats; reefs; salicornia mud; Atlantic salt meadows; Mediterranean salt meadows; floating river vegetation; dry heath; hydrophilous tall herb communities; petrifying springs; old oak woodlands; alluvial forests; Desmoulin's whorl snail; freshwater pearl mussel; white-clawed crayfish; sea lamprey; brook lamprey; river lamprey; twaite shad; Atlantic salmon; otter; Killarney fern; and Nore freshwater pearl mussel.
002193	Ireland's Eye SAC	Sensitive features include: perennial vegetation of stony banks; and vegetated sea cliffs.
002201	Derragh Bog SAC	Sensitive features include: active raised bog; and degraded raised bog.
002203	Girley (Drewstown) Bog SAC	Sensitive features include: degraded raised bog.
002205	Wooddown Bog SAC	Sensitive features include: degraded raised bog.
002249	The Murrough Wetlands SAC	Sensitive features include: annual vegetation of drift lines; perennial vegetation of stony banks; Atlantic salt meadows; Mediterranean salt meadows; cladium fens; alkaline fens.
002256	Ballyprior Grassland SAC	Sensitive features include: orchid-rich calcareous grassland.
002274	Wicklow Reef SAC	Sensitive features include: reefs.
002299	River Boyne And River Blackwater SAC	Sensitive features include: alkaline fens; alluvial forests; river lamprey; Atlantic salmon; and otter.
002331	Mouds Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
002340	Moneybeg And Clareisland Bogs SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
002341	Ardagullion Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
002342	Mount Hevey Bog SAC	Sensitive features include: raised bog; degraded raised bog; and rhynchosporion vegetation.
003000	Rockabill to Dalkey Island SAC	Sensitive features include: reefs; and harbour porpoise.
004006	North Bull Island SPA	Sensitive features include: light-bellied brent goose; shelduck; teal; pintail; shoveler; oystercatcher; golden plover; grey plover; knot; sanderling; dunlin; black-tailed godwit; bar-tailed godwit; curlew; redshank; turnstone; black-headed gull; and wetland and waterbirds.
004014	Rockabill SPA	Sensitive features include: purple sandpiper; roseate tern; common tern; and Arctic tern.
004015	Rogerstown Estuary SPA	Sensitive features include: greylag goose; light-bellied brent goose; shelduck; shoveler; oystercatcher; ringed plover; grey plover; knot; dunlin; black-tailed godwit; redshank; and wetland and waterbirds.
004016	Baldoyle Bay SPA	Sensitive features include: light-bellied brent goose; shelduck; ringed plover; golden plover; grey plover; bar-tailed godwit; wetland and waterbirds.
004024	South Dublin Bay and River Tolka Estuary SPA	Sensitive features include: light-bellied brent goose; oystercatcher; ringed plover; grey plover; knot; sanderling; dunlin; bar-tailed godwit; redshank; black-headed gull; roseate tern; common tern; Arctic tern; and wetland and waterbirds.
004025	Malahide Estuary SPA	Sensitive features include: great crested grebe; light-bellied brent goose; shelduck; pintail; goldeneye; red-breasted merganser; oystercatcher; golden plover; grey plover; knot; dunlin; black-tailed godwit; bar-tailed godwit; redshank; wetland and waterbirds.
004026	Dundalk Bay SPA	Sensitive features include: great crested grebe; greylag goose; light-bellied brent goose; shelduck; teal; mallard; pintail; common scoter; red-breasted merganser; oystercatcher; ringed plover; golden plover; grey plover; lapwing; knot; dunlin; black-tailed godwit; bar-tailed godwit; curlew; redshank; black-headed gull; common gull; herring gulll; and wetland and waterbirds.
004040	Wicklow Mountains SPA	Sensitive features include: merlin and peregrine.
004043	Lough Derravaragh SPA	Sensitive features include: whooper swan; pochard; tufted duck; coot; wetland and waterbirds.
004044	Lough Ennell SPA	Sensitive features include: pochard; tufted duck; coot; wetland and waterbirds.

004061	Lough Kinale and Derragh Lough SPA	Sensitive features include: pochard; tufted duck; wetland and waterbirds.
004063	Poulaphouca Reservoir SPA	Sensitive features include: greylag goose; and lesser black-backed gull.
004065	Lough Sheelin SPA	Sensitive features include: great crested grebe; pochard; tufted duck; goldeneye; wetland and waterbirds.
004069	Lambay Island SPA	Sensitive features include: fulmar; cormorant; shag; greylag goose; lesser black-backed gull; herring gull; kittiwake; guillemot; razorbill; and puffin.
004080	Boyne Estuary SPA	Sensitive features include: shelduck; oystercatcher; golden plover; grey plover; lapwing; knot; sanderling; black-tailed godwit; redshank; turnstone; little tern; and wetland and water birds.
004091	Stabannan-Braganstown SPA	Sensitive features include: greylag goose.
004102	Garriskil Bog SPA	Sensitive features include: Greenland white-fronted goose.
004113	Howth Head Coast SPA	Sensitive features include: kittiwake.
004117	Ireland's Eye SPA	Sensitive features include: Cormorant; Herring Gull; Kittiwake; Guillemot; and Razorbill.
004122	Skerries Islands SPA	Sensitive features include: cormorant; shag; light-bellied brent goose; purple sandpiper; turnstone; and herring gull.
004127	Wicklow Head SPA	Sensitive features include: Black-legged kittiwake; Common guillemot; Peregrine falcon; and Razorbill.
004158	River Nanny Estuary and Shore SPA	Sensitive features include: oystercatcher; ringed plover; golden plover; knot; sanderling; herring gull; wetland and waterbirds.
004172	Dalkey Islands SPA	Sensitive features include: roseate tern, common tern and Arctic tern.
004186	The Murrough SPA	Sensitive features include: Red-throated Diver; Greylag Goose; Light-bellied Brent Goose; Wigeon; Teal; Black-headed Gull; Herring Gull; Little Tern; and Wetland and Waterbirds.
004232	River Boyne and River Blackwater SPA	Sensitive features include: kingfisher.
Other SACs (5) and SPAs (7) connected to the Strategy area but beyond 15km buffer		
Site Code	**Site Name**	**Sensitive Features**
000216	River Shannon Callows SAC	Sensitive features include: raised bog; degraded raised bog; rhynchosporion vegetation; alkaline fens; old oak woodlands; alluvial forests; white-clawed crayfish; sea lamprey; brook lamprey; Atlantic salmon; and otter.
000440	Lough Ree SAC	Sensitive features include: natural eutrophic lakes; orchid-rich calcareous grassland; active raised bog; degraded raised bog, alkaline fens; limestone pavement; old oak woodlands; bog woodland; and otter.
002137	Lower River Suir SAC	Sensitive features include: Atlantic salt meadows; Mediterranean salt meadows; floating river vegetation; hydrophilous tall herb communities; old oak woodlands; alluvial forests; yew woodlands; freshwater pearl mussel; white-clawed crayfish; sea lamprey; brook lamprey; river lamprey; twaite shad; Atlantic salmon and otter.
002165	Lower River Shannon SAC	Sensitive features include: mudflats and sandflats; coastal lagoons; reefs; Atlantic salt meadows; alluvial forests; freshwater pearl mussel; sea lamprey; brook lamprey; river lamprey; salmon; common bottlenose dolphin; and otter.
002241	Lough Derg, North-east Shore SAC	Sensitive features include: juniper scrub; cladium fens; alkaline fens; limestone pavement; alluvial forests; and yew woodlands.
004019	The Raven SPA	Sensitive features include: red-throated diver; cormorant; common scoter; grey plover; sanderling; Greenland white-fronted goose; and wetland and waterbirds.
004046	Lough Ree SPA	Sensitive features include: little grebe; whooper swan; wigeon; teal; mallard; shoveler; tufted duck; common scoter; goldeneye; coot; golden plover; lapwing; common tern; and wetland and waterbirds.
004076	Wexford Harbour and Slobs SPA	Sensitive features include: little grebe; grey heron; whooper swan; wigeon; teal; mallard; scaup; grey plover; knot; dunlin; little tern; wetland and waterbirds.
004096	Middle Shannon Callows SPA	Sensitive features include: whooper swan; wigeon; corncrake; golden plover; lapwing; black-tailed godwit; black-headed gull; wetland and waterbirds.
004097	River Suck Callows SPA	Sensitive features include: whooper swan; wigeon; golden plover; lapwing; Greenland white-fronted goose; wetland and waterbirds.
004077	River Shannon and River Fergus Estuaries SPA	Sensitive features include: cormorant; whooper swan; light-bellied brent goose; shelduck; wigeon; teal; pintail; shoveler; scaup; ringed plover; golden plover; grey plover; wetland and waterbirds.
004058	Lough Derg (Shannon) SPA	Sensitive features include: cormorant; tufted duck; goldeneye; common tern; and wetland and waterbirds.

NHAs (14) and pNHAs (167) within 15km from the Strategy area							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
000570	Black Castle Bog NHA	000552	Corstown Loughs pNHA	000860	Clopook Wood pNHA	001573	Ballynabarny Fen pNHA
000677	Cloncrow Bog (New Forest) NHA	000553	Crewbane Marsh pNHA	000865	Emo Court pNHA	001576	Cromwell's Bush Fen pNHA
000684	Lough Derravaragh NHA	000554	Laytown Dunes/Nanny Estuary pNHA	000867	Kilteale Hill pNHA	001578	Duleek Commons pNHA
000694	Wooddown Bog NHA	000556	Lough Shesk pNHA	000876	Ridge of Portlaoise pNHA	001579	Balrath Woods pNHA

000985	Lough Kinale And Derragh Lough NHA	000557	Rathmoylan Esker pNHA	000878	Rock Of Dunamase pNHA	001584	Mount Hevey Bog pNHA
001218	Skerries Islands NHA	000560	Lough Fea Demesne pNHA	000881	The Great Heath Of Portlaoise pNHA	001587	Mentrim Lough pNHA
001324	Jamestown Bog NHA	000561	Lough Naglack pNHA	000917	Raheen Lough pNHA	001589	Rossnaree Riverbank pNHA
001388	Carbury Bog NHA	000582	Raheenmore Bog pNHA	000925	The Long Derries, Edenderry pNHA	001591	Slane Riverbank pNHA
001393	Hodgestown Bog NHA	000672	Aghalasty Fen pNHA	000987	Lough Sheelin pNHA	001592	Boyne Woods pNHA
001580	Girley Bog NHA	000679	Garriskil Bog pNHA	000991	Dodder Valley pNHA	001593	Thomastown Bog pNHA
001582	Molerick Bog NHA	000681	Hill Of Mael And The Rock Of Curry pNHA	000992	Lough Gowna pNHA	001594	Ballyhoe Lough pNHA
002033	Daingean Bog NHA	000685	Lough Ennell pNHA	001202	Ballybetagh Bog pNHA	001599	Creevy Lough pNHA
002323	Milltownpass Bog NHA	000686	Lough Glore pNHA	001203	Knock Lake pNHA	001608	Monalty Lough pNHA
002382	Coan Bogs NHA	000690	Lough Sheever Fen/Slevin's Lough Complex pNHA	001204	Bog Of The Ring pNHA	001616	Louth Hall And Ardee Woods pNHA
000006	Killyconny Bog (Cloghbally) pNHA	000702	Leskinfere Church, Clogh pNHA	001205	Booterstown Marsh pNHA	001671	Spring And Corcrin Loughs pNHA
000008	Lough Ramor pNHA	000713	Ballyman Glen pNHA	001206	Dalkey Coastal Zone And Killiney Hill pNHA	001721	Lough Bane pNHA
000128	Liffey Valley pNHA	000714	Bray Head pNHA	001207	Dingle Glen pNHA	001733	Ardamine Wood pNHA
000178	Santry Demesne pNHA	000716	Carriggower Bog pNHA	001208	Feltrim Hill pNHA	001742	Kilpatrick Sandhills pNHA
000199	Baldoyle Bay pNHA	000718	Devil's Glen pNHA	001209	Glenasmole Valley pNHA	001745	Arklow Rock-Askintinny pNHA
000201	Dolphins, Dublin Docks pNHA	000719	Glen Of The Downs pNHA	001211	Loughlinstown Woods pNHA	001746	Arklow Sand Dunes pNHA
000202	Howth Head pNHA	000724	Kilmacanoge Marsh pNHA	001212	Lugmore Glen pNHA	001748	Avoca River Valley pNHA
000203	Ireland's Eye pNHA	000725	Knocksink Wood pNHA	001215	Portraine Shore pNHA	001749	Ballinacor Wood pNHA
000204	Lambay Island pNHA	000729	Buckroney-Brittas Dunes And Fen pNHA	001293	Blackhall Woods pNHA	001750	Ballinagee Wood pNHA
000205	Malahide Estuary pNHA	000730	The Murrough pNHA	001357	Trim pNHA	001751	Ballycore Rath pNHA
000206	North Dublin Bay pNHA	000731	Poulaphouca Reservoir pNHA	001387	Ballynafagh Lake pNHA	001753	Fitzsimon's Wood pNHA
000207	Rockabill Island pNHA	000733	Vale Of Clara (Rathdrum Wood) pNHA	001389	Corballis Hill pNHA	001754	Dargle River Valley pNHA
000208	Rogerstown Estuary pNHA	000734	Wicklow Head pNHA	001390	Derryvullagh Island pNHA	001755	Glencree Valley pNHA
000210	South Dublin Bay pNHA	000745	Ballymoney Strand pNHA	001391	Donadea Wood pNHA	001756	Glenealy Woods pNHA
000211	Slade Of Saggart And Crooksling Glen pNHA	000750	Bunclody Slate Quarries pNHA	001394	Kilteel Wood pNHA	001757	Holdenstown Bog pNHA
000390	Ballina Bog pNHA	000755	Clone Fox Covert pNHA	001395	Liffey At Osberstown pNHA	001759	Newtown Marshes pNHA
000391	Ballynafagh Bog pNHA	000757	Courtown Dunes And Glen pNHA	001396	Liffey Bank Above Athgarvan pNHA	001763	Sluice River Marsh pNHA
000392	Curragh (Kildare) pNHA	000770	Blackstairs Mountains pNHA	001398	Rye Water Valley/Carton pNHA	001764	Lowtown Fen pNHA
000393	Liffey Valley Meander Belt pNHA	000781	Slaney River Valley pNHA	001454	Ardee Cutaway Bog pNHA	001766	Magherabeg Dunes pNHA
000395	Mouds Bog pNHA	000788	Ardristan Fen pNHA	001458	Castlecoo Hill pNHA	001767	Powerscourt Waterfall pNHA
000396	Pollardstown Fen pNHA	000792	Baggot's Wood pNHA	001459	Clogher Head pNHA	001768	Powerscourt Woodland pNHA
000397	Red Bog, Kildare pNHA	000806	Cloghristick Wood pNHA	001461	Darver Castle Woods pNHA	001769	Great Sugar Loaf pNHA
000416	Derries Wood pNHA	000808	John's Hill pNHA	001462	Drumcah, Toprass And Cortial Loughs pNHA	001771	Vartry Reservoir pNHA

000421	Timahoe Esker pNHA	000810	Oakpark pNHA	001464	Mellifont Abbey Woods pNHA	001772	Dunlavin Marshes pNHA
000455	Dundalk Bay pNHA	000857	Ballylynan pNHA	001494	Dunamase Woods pNHA	001800	Stradbally Hill pNHA
000456	Stabannan-Braganstown pNHA	000858	Barrow Valley At Tankardstown Bridge pNHA	001558	Breakey Loughs pNHA	001801	Barmeath Woods pNHA
001803	Stephenstown Pond pNHA	001804	King William's Glen pNHA	001806	Kildemock Marsh pNHA	001810	White Lough, Ben Loughs And Lough Doo pNHA
001814	Lough Naneagh pNHA	001828	Reaghstown Marsh pNHA	001834	Kilgorman River Marsh pNHA	001852	Tomnafinnoge Wood pNHA
001856	Dunany Point pNHA	001861	Dowth Wetland pNHA	001862	Boyne River Islands pNHA	001929	Wicklow Town Sites pNHA
001931	Arklow Town Marsh pNHA	001957	Boyne Coast And Estuary pNHA	002000	Loughshinny Coast pNHA	002053	Hollywood Glen pNHA
002069	Ardagullion Bog pNHA	002077	Nafarty Fen pNHA	002093	Avondale pNHA	002103	Royal Canal pNHA
002104	Grand Canal pNHA						

County Geological Sites: Dublin City (12)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
DC001	51 St. Stephens Green	DC002	Dublin City Walls	DC003	General Post Office	DC004	Glasnevin Cemetery
DC005	Guinness Wells	DC006	Museum Building, Trinity College	DC007	North Bull Island	DC008	Oscar Wilde Statue
DC009	Phoenix Park	DC010	River Dodder	DC011	River Poddle	DC012	Temple Bar Street Well
County Geological Sites: Fingal (20)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
DF001	Portraine Shore	DF002	Fancourt Shore	DF003	Lambay Island	DF004	Curkeen Hill Quarry
DF005	Feltrim Quarry	DF006	Malahide Coast	DF007	Skerries to Rush	DF008	Ardgillan House Boulder
DF009	Bottle Quay	DF010	Hill of Howth	DF011	Ireland's Eye	DF013	Balscaddan Bay
DF014	Claremont Strand	DF015	Milverton Quarry	DF016	Nags Head Quarry	DF017	Balrickard Quarry
DF018	Walshestown Stream Section	DF020	Malahide Point	DF021	Mulhuddart Holy Well	DF022	Huntstown Quarry
County Geological Sites: Dún Laoghaire Rathdown (12)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
DLR001	Ballybetagh Bog	DLR002	Ballycorus	DLR003	Blackrock Breccia	DLR004	Carrickgollogan
DLR005	Dalkey Hill	DLR006	Dalkey Island	DLR007	Killiney Bay	DLR008	Killiney Hill
DLR009	Murphystone Quarry	DLR010	The Scalp	DLR011	Three Rock Mountain	DLR012	White Rock, Killiney
County Geological Sites: Kildare (22)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
KE001	Chair of Kildare	KE002	Dunmurry Hill	KE003	Hill of Allen	KE004	Slate Quarries
KE005	Ballysax	KE006	Glen Ding	KE007	Moorhill	KE008	Pollardstown Fen and springs
KE009	The Curragh	KE010	Ballykane Hill	KE011	Carbury Castle	KE012	Carrick Hill
KE013	Liffey Oxbow	KE014	Liffey Valley	KE015	Kilbrook Spring	KE016	Louisa Bridge Cold Spring
KE017	Louisa Bridge Warm Spring	KE018	St. Bridget's Well - Japanese Gardens	KE019	St. Patrick's Well 1	KE020	St. Patrick's Well 2
KE021	St. Peter's Well	KE022	Rathcore Spring				
County Geological Sites: Meath (28)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**

MH001	Gibstown Castle	MH002	St. Keeran's Well	MH003	Bellewstown	MH004	Grangegeeth
MH005	Barley Hill Quarry	MH006	Cregg	MH007	Poulmore Scarp	MH008	Laytown to Gormanston
MH009	Benhead	MH010	Blackwater Valley	MH011	Boyne Valley	MH012	Galtrim Moraine
MH013	Mullaghmore	MH014	Murrens	MH015	Rathkenny	MH016	Rathmolyon Esker
MH017	Trim Esker	MH018	Altmush Stream	MH019	Bray Hill	MH020	Duleek Quarry
MH021	Kilbride Quarry	MH022	Nobber	MH023	Painestown Quarry	MH024	Rockwood Cliffs
MH025	Carrickleck (Silica Sand)	MH026	Dunshaughlin	MH027	Boyne River, Trim	MH028	St. Gorman's Spring
County Geological Sites: South Dublin (10)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
SD001	Ballinascorney Quarry	SD002	Belgard Quarry	SD003	Brittas Gravel Complex	SD004	Dodder Terraces
SD005	Greenhills Esker	SD006	Kippure	SD007	Liffey Valley Centre Road Sections	SD008	Lucan Esker
SD009	N4 Lucan cutting	SD010	Newcastle Buried Channel				
County Geological Sites: Wicklow (62)							
Site Code	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**	**Site Code**	**Site Name**
WW001	Athdown Moraine	WW001	Aughrim Quarry	WW003	Avoca - Connary	WW004	Avoca - Cronebane
WW005	Avoca - Sroughmore	WW006	Avoca - Tigroney East	WW007	Avoca - Tigroney West	WW008	Avoca - West Avoca
WW009	Ballydonnell	WW010	Ballyknockan Quarries	WW011	Ballyrahan Quarry	WW012	Blessington Delta
WW013	Bray Head	WW014	Britonstown	WW015	Camaderry Appinite	WW016	Cloghleagh Mine
WW017	Lough Dan, Lough Tay and Cloghoge River	WW018	Devil's Glen	WW019	Dunran Channel	WW020	Enniskerry Delta
WW021	Glasnamullen	WW022	Glen Ding	WW023	Glen Of The Downs	WW024	Glencullen River
WW025	Glendalough	WW026	Glendasan - Foxrock	WW027	Glendasan - Hero	WW028	Glendasan - Luganure
WW029	Glendasan - Ruplagh	WW030	Glendasan - St. Kevins	WW031	Glenmacnass Valley	WW032	Glenmalure
WW033	Goldmines River	WW034	Great Sugar Loaf	WW035	Greystones (Appinite)	WW036	Greystones Beach
WW037	Hollywood Glen	WW038	Kilmacurra Quarry	WW039	Kippure	WW040	Lough Bray
WW041	Lough Dan, North End (Granite contact)	WW042	Lough Nahanagan	WW043	Lough Ouler	WW044	Luggala
WW045	Lugnaquilla	WW046	Manger-Saundersgrove	WW047	Mottee Stone	WW048	Mullaghcleevaun
WW049	Powerscourt Deerpark Cave	WW050	Powerscourt Waterfall	WW051	River Dargle Valley	WW052	Rocky Valley
WW053	Slieveroe lane and rail cutting	WW054	Snugborough	WW055	The Scalp	WW056	Tober Demesne
WW057	Toor Channel	WW058	Upper Lockstown Delta and Kings River	WW059	Upper River Liffey	WW060	Wicklow-Greystones Coast
WW061	Wicklow Service Area	WW062	Woodenbridge Wellfield				

Name and Code[63]	Type	WFD Surface Waterbody Status (2013 -2018)[64]
Avoca_010	**River**	**Bad** - due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from historically polluted sites**.
Avoca_020	**River**	**Bad** - due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from historically polluted sites**.
Rogerstown Estuary	**Transitional**	**Bad** - due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Askinch Upper Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Athboy_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Avonbeg_030	**River**	**Poor -**due to poor ecological/biological status. No pressures identified.
Ballyboghil_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and urban wastewater sources.**
Ballyduff Stream (Wicklow)_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Barrow_090	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Barrow_140	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Blackwater (Kells)_120	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as **being under significant pressure from agricultural sources.**
Blackwater (Longwood)_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Boycetown_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Broadmeadow_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural, urban run-off and urban wastewater sources.**
Broadmeadow_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, urban run-off and urban wastewater sources.**
Broadmeadow_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**
Broadmeadow_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Brown's Beck Brook_010	**River**	**Poor -**due to poor ecological/biological status. No pressures identified.
Camac_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from industrial and urban run-off sources.**
Camac_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, urban run-off and urban wastewater sources.**
Clady (Meath)_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from extractive industry related sources.**
Clonshanbo_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Clonshanbo_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**
Dee_060	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Delvin_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**
Delvin_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and urban wastewater sources.**
Dodder_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban run-off sources.**
Dunshaughlin Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**

[63] The number at the end of each river water body 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' and the final waterbody before the river becomes transitional is '_180'.

[64] There is a data gap relating to WFD surface water status data. There are a number of waterbodies within the Plan area with overall status currently not assigned to them and the term "*unassigned status"* applies in respect of these waterbodies. These are not included on **Error! Reference source not found.**

Fairyhouse Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**
Figile_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, industrial, urban wastewater and extractive industry related sources.**
Glash_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from extractive industry related sources.**
Graney (Lerr)_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Greese_010	**River**	**Poor -**due to poor ecological/biological status. No pressures identified.
Greese_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from industrial sources.**
Inny_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Inny_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Kill Of The Grange Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, urban run-off and urban wastewater sources.**
Killary Water_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Knightsbrook_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural, urban run-off and industrial sources.**
Knightsbrook_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Lyreen_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural, industrial and domestic wastewater sources.**
Lyreen_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and urban run-off sources.**
Mayne_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban run-off sources.**
Morell_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Morell_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Mosney_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural, urban run-off and domestic wastewater sources.**
Moynagh_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and urban wastewater sources.**
Moynalty_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Moynalty_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and industrial sources.**
Moynalty_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and urban wastewater sources.**
Mullagh Lough Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban wastewater sources.**
Nanny (Meath)_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural, domestic wastewater and urban wastewater sources.**
Nanny (Meath)_050	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Newtownmountkennedy_020	**River**	**Poor -**due to poor ecological/biological status. No pressures identified.
Painestown_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Pinkeen_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Powerstown (Dublin)_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Rathmore Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Rathnew Stream_010	**River**	**Poor -**due to poor ecological/biological status. No pressures identified.
Ratoath Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural, domestic wastewater and urban run-off sources.**
Rye Water_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural, domestic wastewater and urban run-off sources.**

Santry_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban run-off and urban wastewater sources.**
Skane_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Skane_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Skane_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Slate_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural and urban wastewater sources.**
Slate_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from extractive industry related sources.**
Tolka_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Tolka_030	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from industrial sources.**
Tolka_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban run-off sources.**
Tolka_050	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from urban run-off and urban wastewater sources.**
Tully Stream_010	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from industrial sources.**
Tully Stream_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from industrial sources.**
Ward_040	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from hydromorphological/anthropogenic and urban run-off sources.**
Yellow (Blackwater Kells)_020	**River**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from agricultural sources.**
Broadmeadow Water	**Transitional**	**Poor -**due to poor ecological/biological status. This waterbody is also identified as being **under significant pressure from domestic wastewater and urban wastewater sources**
Aghalona_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Athboy_010	**River**	**Moderate**. No pressures identified.
Athboy_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Athboy_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and domestic wastewater sources.**
Athboy_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Athboy_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and urban wastewater sources.**
Athy Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Athy Stream_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Aughrim (Wicklow)_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Aughrim (Wicklow)_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from** aquacultural sources.
Avonmore_070	**River**	**Moderate**. No pressures identified.
Ballough Stream_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and urban wastewater sources.**
Ballydonnell Brook_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from forestry sources.**
Ballylow Brook_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from forestry sources.**
Ballyronan Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from** domestic wastewater and **industrial sources.**
Bann_010	**River**	**Moderate**. No pressures identified.
Barrow_160	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and urban run-off sources.**
Blacklion Stream (Carlow)_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**

Blacklion Stream (Carlow)_020	**River**	**Moderate**. No pressures identified.
Blackwater (Kells)_080	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Blackwater (Kells)_100	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Blackwater (Kells)_110	**River**	**Moderate**. No pressures identified.
Blackwater (Longwood)_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Blackwater (Longwood)_040	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and extractive industry related sources.**
Blackwater (Longwood)_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Boycetown_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Boyne_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, domestic wastewater and extractive industry related sources.**
Boyne_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and urban run-off sources.**
Boyne_030	**River**	**Moderate**. No pressures identified.
Boyne_040	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and extractive industry related sources.**
Boyne_070	**River**	**Moderate**. No pressures identified.
Boyne_080	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Boyne_090	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and urban run-off sources.**
Boyne_100	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Boyne_150	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and domestic wastewater sources.**
Brittas_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Burren_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and urban run-off sources.**
Camac_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Carrickmines Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Cloghoge Brook_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from extractive industry related sources.**
Cloncumber Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Cross Water_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Crosskeys Stream_010	**River**	**Moderate**. No pressures identified.
D'arcy's Crossroads Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Dargle_030	**River**	**Moderate**. No pressures identified.
Dee_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Dee_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Dee_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Deel (Raharney)_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Delvin_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, agricultural and extractive industry related sources.**
Derry_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and forestry sources.**

Derry_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and urban wastewater sources.**
Derry_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Derry_040	**River**	**Moderate**. No pressures identified.
Dodder_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from** historically polluted sites.
Dodder_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic, urban run-off and urban wastewater sources.**
Douglas (Kiltegan)_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Douglas (Kiltegan)_020	**River**	**Moderate**. No pressures identified.
Dunboyne Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Figile_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from extractive industry related sources.**
Figile_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from extractive industry related sources.**
Glash_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from extractive industry related sources.**
Glenealo_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from historically polluted sites and forestry sources.**
Graney (Lerr)_010	**River**	**Moderate**. No pressures identified.
Greese_020	**River**	**Moderate**. No pressures identified.
Greese_040	**River**	**Moderate**. No pressures identified.
Greese_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Greese_060	**River**	**Moderate**. No pressures identified.
Hurley_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
Hurley_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and waste sources.**
Inny_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Inny_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Kilcoole Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban wastewater sources.**
Kilmacanoge_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Kilmainham (Dee)_010	**River**	**Moderate**. No pressures identified.
Kilmainham (Dee)_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**
King's (Liffey)_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from forestry sources.**
King's (Liffey)_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from forestry sources.**
Kinnegad_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from extractive industry related sources.**
Kinnegad_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Knightsbrook_020	**River**	**Moderate**. No pressures identified.
Lask_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Lerr_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Lerr_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic and agricultural sources.**

Lerr_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Lerr_040	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Liffey_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Liffey_040	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and urban wastewater sources.**
Liffey_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic sources.**
Liffey_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Liffey_100	**River**	**Moderate**. No pressures identified.
Liffey_190	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from** urban run-off and **urban wastewater sources.**
Lough Lene-Adeel Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Mattock_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and urban wastewater sources.**
Morell_040	**River**	**Moderate**. No pressures identified.
Moynalty_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, agricultural and urban wastewater sources.**
Moynalty_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, agricultural and urban wastewater sources.**
Nanny (Meath)_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, agricultural and urban wastewater sources.**
Nanny (Meath)_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic, agricultural and industrial sources.**
Nanny (Meath)_040	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Newcastle (Wicklow)_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban wastewater sources.**
Palatine Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and agricultural sources.**
Potter's_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic,** agricultural, forestry, waste and **extractive industry related sources.**
Rosnastraw Stream_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and forestry sources.**
Rosnastraw Stream_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Rye Water_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Rye Water_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and urban wastewater sources.**
Rye Water_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Shanganagh_010	**River**	**Moderate**. No pressures identified.
Slaney_050	**River**	**Moderate**. No pressures identified.
Slaney_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Slate_050	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological / anthropogenic and extractive industry related sources.**
Slate_060	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from urban run-off sources.**
Slate_070	**River**	**Moderate**. No pressures identified.
Stonyford_010	**River**	**Moderate**. No pressures identified.
Stonyford_030	**River**	**Moderate**. No pressures identified.
Stonyford_040	**River**	**Moderate**. No pressures identified.

Tolka_010	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and domestic wastewater sources.**
Tully Stream_030	**River**	**Moderate**. No pressures identified.
Tully Stream_040	**River**	**Moderate**. No pressures identified.
Ward_020	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic, agricultural and urban wastewater sources.**
Ward_030	**River**	**Moderate**. This waterbody is identified as being **under significant pressure from** other **hydromorphological/anthropogenic and urban wastewater sources.**
Brackan	**Lake**	**Moderate**. This waterbody is identified as being **under significant pressure from abstractions and agricultural sources.**
Dan	**Lake**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Tay	**Lake**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Avoca Estuary	**Transitional**	**Moderate**. This waterbody is identified as being **under significant pressure from historically polluted sites.**
Boyne Estuary	**Transitional**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural and urban wastewater sources.**
Broad Lough	**Transitional**	**Moderate**. This waterbody is identified as being **under significant pressure from agricultural sources.**
Tolka Estuary	**Transitional**	**Moderate**. This waterbody is identified as being **under significant pressure from urban wastewater sources.**
Malahide Bay	**Coastal**	**Moderate**. This waterbody is identified as being **under significant pressure from urban wastewater sources.**
Boyne Estuary Plume Zone	**Coastal**	**Moderate**. This waterbody is identified as being **under significant pressure from hydromorphological/anthropogenic sources.**
Grand Canal Basin (Liffey and Dublin Bay)	**Canal**	**Moderate**. No pressures identified.
Avonbeg_010	**River**	**Good**. No pressures identified.
Avonbeg_020	**River**	**Good**. No pressures identified.
Avonbeg_040	**River**	**Good**. No pressures identified.
Avonmore_010	**River**	**Good**. This waterbody is identified as being **under pressure from agricultural and atmospheric sources.**
Avonmore_020	**River**	**Good**. This waterbody is identified as being **under pressure from forestry sources.**
Avonmore_030	**River**	**Good**. No pressures identified.
Avonmore_050	**River**	**Good**. No pressures identified.
Avonmore_060	**River**	**Good**. No pressures identified.
Ballinagee_010	**River**	**Good**. No pressures identified.
Ballycreen Brook_010	**River**	**Good**. No pressures identified.
Ballymacahara_010	**River**	**Good**. No pressures identified.
Barrow_110	**River**	**Good**. No pressures identified.
Barrow_120	**River**	**Good**. No pressures identified.
Blackwater (Kells)_090	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**
Bothoge_010	**River**	**Good**. No pressures identified.
Bothoge_020	**River**	**Good**. No pressures identified.
Boyne_050	**River**	**Good**. No pressures identified.
Boyne_060	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**

Boyne_120	**River**	**Good**. No pressures identified.
Boyne_160	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic, agricultural and urban wastewater sources.**
Boyne_170	**River**	**Good**. No pressures identified.
Boyne_180	**River**	**Good**. No pressures identified.
Brittas_010	**River**	**Good**. No pressures identified.
Camac_010	**River**	**Good**. No pressures identified.
Carrigower_010	**River**	**Good**. No pressures identified.
Carrigower_020	**River**	**Good**. No pressures identified.
Castlejordan_020	**River**	**Good**. This waterbody is identified as being **under pressure from extractive industry related sources.**
Castlejordan_030	**River**	**Good**. No pressures identified.
Cock Brook_010	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**
Coolalug Stream_010	**River**	**Good**. This waterbody is identified as being **under pressure from forestry sources.**
Coolboy_010	**River**	**Good**. No pressures identified.
Dargle_010	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**
Dargle_020	**River**	**Good**. No pressures identified.
Dargle_040	**River**	**Good**. No pressures identified.
Dee_040	**River**	**Good**. No pressures identified.
Deel (Raharney)_010	**River**	**Good**. No pressures identified.
Deel (Raharney)_060	**River**	**Good**. This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**
Derreen_030	**River**	**Good**. No pressures identified.
Derreen_050	**River**	**Good**. No pressures identified.
Derreen_060	**River**	**Good**. No pressures identified.
Derreen_080	**River**	**Good**. No pressures identified.
Derreen_100	**River**	**Good**. No pressures identified.
Derry Water_010	**River**	**Good.** No pressures identified.
Derry Water_020	**River**	**Good.** No pressures identified.
Derry Water_030	**River**	**Good.** No pressures identified.
Derry_050	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Devlin's_010	**River**	**Good.** No pressures identified.
Devlin's_020	**River**	**Good**. No pressures identified.
Dodder_010	**River**	**Good.** No pressures identified.
Dodder_020	**River**	**Good.** No pressures identified.
Douglas (Liffey)_010	**River**	**Good.** No pressures identified.

Figile_060	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Glencree_010	**River**	**Good.** No pressures identified.
Glencullen_020	**River**	**Good.** No pressures identified.
Glendasan_010	**River**	**Good.** No pressures identified.
Glenealo_010	**River**	**Good.** No pressures identified.
Glenmacnass_010	**River**	**Good.** No pressures identified.
Glenmacnass_020	**River**	**Good.** No pressures identified.
Glyde_010	**River**	**Good.** No pressures identified.
Glyde_030	**River**	**Good.** No pressures identified.
Grangecon Stream_010	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Hurley_020	**River**	**Good.** No pressures identified.
Killary Water_010	**River**	**Good.** This waterbody is identified as being **under pressure from** hydromorphological/anthropogenic , **agricultural and urban wastewater sources.**
Lemonstown Stream_010	**River**	**Good.** This waterbody is identified as being **under pressure from hydromorphological / anthropogenic sources.**
Lemonstown Stream_020	**River**	**Good.** No pressures identified.
Liffey_020	**River**	**Good**. No pressures identified.
Liffey_030	**River**	**Good.** No pressures identified.
Liffey_070	**River**	**Good**. No pressures identified.
Liffey_080	**River**	**Good.** No pressures identified.
Liffey_090	**River**	**Good.** No pressures identified.
Liffey_120	**River**	**Good.** No pressures identified.
Liffey_130	**River**	**Good.** No pressures identified.
Liffey_140	**River**	**Good.** No pressures identified.
Liffey_150	**River**	**Good.** This waterbody is identified as being **under pressure from urban run-off sources.**
Liffey_170	**River**	**Good.** This waterbody is identified as being **under pressure from urban run-off and urban wastewater sources.**
Little Slaney_010	**River**	**Good.** No pressures identified.
Mattock_020	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Mine_020	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Morell_010	**River**	**Good.** No pressures identified.
Moynalty_010	**River**	**Good.** No pressures identified.
Newtownmountkennedy_010	**River**	**Good.** No pressures identified.
Ow_010	**River**	**Good.** No pressures identified.
Ow_020	**River**	**Good.** No pressures identified.
Ow_030	**River**	**Good.** No pressures identified.

Owenadoher_010	**River**	**Good.** This waterbody is identified as being **under pressure from urban run-off sources.**
Potter's_020	**River**	**Good.** No pressures identified.
Redcross_010	**River**	**Good.** No pressures identified.
Shillelagh_010	**River**	**Good.** No pressures identified.
Slaney_030	**River**	**Good.** No pressures identified.
Slaney_070	**River**	**Good**. No pressures identified.
Templerainy Stream_010	**River**	**Good.** This waterbody is identified as being **under pressure from agricultural sources.**
Three Mile Water_010	**River**	**Good**. This waterbody is identified as being **under pressure from agricultural sources.**
Three Mile Water_020	**River**	**Good.** No pressures identified.
Vartry_010	**River**	**Good.** No pressures identified.
Vartry_020	**River**	**Good.** No pressures identified.
Vartry_030	**River**	**Good.** No pressures identified.
Vartry_040	**River**	**Good.** No pressures identified.
Yellow (Castlejordan)_030	**River**	**Good.** No pressures identified.
Annagh-White	**Lake**	**Good.** No pressures identified.
Bane Noggin Hill	**Lake**	**Good.** No pressures identified.
Bray Lower	**Lake**	**Good.** No pressures identified.
Glenasmole Lower	**Lake**	**Good.** No pressures identified.
Glenasmole Upper	**Lake**	**Good.** No pressures identified.
Pollaphuca	**Lake**	**Good.** No pressures identified.
Sheelin	**Lake**	**Good.** No pressures identified.
Varty Lower	**Lake**	**Good.** No pressures identified.
Liffey Estuary Lower	**Transitional**	**Good.** This waterbody is identified as being **under pressure from urban wastewater sources.**
Liffey Estuary Upper	**Transitional**	**Good.** This waterbody is identified as being **under pressure from urban wastewater sources.**
Irish Sea Dublin (HA 09)	**Coastal**	**Good.** No pressures identified.
Dublin Bay	**Coastal**	**Good**. No pressures identified.
Grand Canal Barrow Line (Barrow)	**Canal**	**Good**. No pressures identified.
Grand Canal Main Line (Boyne)	**Canal**	**Good**. No pressures identified.
Grand Canal Main Line (Liffey and Dublin Bay)	**Canal**	**Good.** No pressures identified.
Grand Canal Main Line East (Barrow)	**Canal**	**Good.** No pressures identified.
Grand Canal Milltown Feeder (Barrow)	**Canal**	**Good.** No pressures identified.
Grand Canal Naas Line (Liffey and Dublin Bay)	**Canal**	**Good.** No pressures identified.
Royal Canal Main Line (Boyne)	**Canal**	**Good.** No pressures identified.

Royal Canal Main Line (Liffey and Dublin Bay)	**Canal**	**Good.** No pressures identified.
Askanagap Stream_010	**River**	**High**. No pressures identified.
Avonmore_040	**River**	**High.** No pressures identified.
Ballycreen Brook_020	**River**	**High.** No pressures identified.
Coolboy_020	**River**	**High.** No pressures identified.
Derreen_010	**River**	**High**. No pressures identified.
Glencullen_010	**River**	**High**. No pressures identified.
Gold Mine_010	**River**	**High.** No pressures identified.
Knickeen_010	**River**	**High.** No pressures identified.
Redcross_020	**River**	**High.** No pressures identified.
Slaney_010	**River**	**High.** No pressures identified.
Slaney_020	**River**	**High**. No pressures identified.
Slaney_040	**River**	**High.** No pressures identified.
Upper Glendalough	**Lake**	**High**. No pressures identified.
Southwestern Irish Sea - Killiney Bay (HA10)	**Coastal**	**High**. No pressures identified.
Northwestern Irish Sea (HA 08)	**Coastal**	**High.** This waterbody is identified as being **under pressure from hydromorphological/anthropogenic sources.**