

NATURA IMPACT REPORT

IN SUPPORT OF THE **APPROPRIATE ASSESSMENT**

FOR THE **CORK METROPOLITAN AREA**

TRANSPORT STRATEGY 2040

**IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE**

for: National Transport Authority

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Section 1 Introduction

1.1 Background

This Natura Impact Report¹ (NIR) has been prepared to support the Appropriate Assessment (AA) of the Cork Metropolitan Area Transport Strategy 2040 ("the Strategy") in accordance with the requirements of Article 6(3) Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the "Habitats Directive").

This report is part of the ongoing AA process that is being undertaken alongside the preparation of the Strategy. It will be taken into account, alongside other documentation prepared as part of this process, when the planning authority finalises the AA at adoption of the Strategy.

1.2 Legislative Context

The Habitats Directive provides legal protection for habitats and species of European importance. The overall aim of the Habitats Directive is to maintain or restore the "favourable conservation status" of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Council Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European Sites and Natura 2000.

AA is required by the Habitats Directive, as transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Planning and Development Act (as amended). AA is an assessment of the potential for adverse or negative effects of a plan or project, in combination with other plans or projects, on the conservation objectives of a European Site. These sites consist of SACs and SPAs and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

1.3 Approach

The AA is based on best scientific knowledge and has utilised ecological and hydrological expertise. In addition, a detailed online review of published scientific literature and 'grey' literature was conducted. This included a detailed review of the National Parks and Wildlife (NPWS) website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives.

The ecological desktop study completed for the AA of the LAP comprised the following elements:

- Identification of European Sites within 15 km of the Strategy area with identification of potential pathways links for specific sites (if relevant) greater than 15km from the Strategy area;
- Review of the NPWS site synopsis and conservation objectives for European Sites with identification of potential pathways from the Strategy area; and
- Examination of available information on protected species.

There are four main stages in the AA process as follow:

Stage One: Screening

The process which identifies the likely impacts upon a European Site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant.

Stage Two: Appropriate Assessment

The consideration of the impact on the integrity of the European Site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is required to ensure no significant adverse impacts on European Sites, then the process may

¹ Also referred to as Natura Impact Statement

end at this stage. However, if the likelihood of significant impacts remains, then the process must proceed to Stage Three.

Stage Three: Assessment of Alternative Solutions

The process that examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European Site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. This approach aims to avoid any impacts on European Sites by identifying possible impacts early in the plan-making process and avoiding such impacts. Second, the approach involves the application of mitigation measures, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If potential impacts on European Sites remain, the approach requires the consideration of alternative solutions. If no alternative solutions are identified and the Plan/Strategy etc. is required for imperative reasons of overriding public interest, then compensation measures are required for any remaining adverse effect(s).

The assessment of potential effects on European Sites is conducted following a standard source-pathway-receptor model, where, in order for an effect to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g. pollutant run-off from works;
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats; and
- Receptor(s) – qualifying aquatic habitats and species of European Sites.

In the interest of this report, receptors are the ecological features that are known to be utilised by the qualifying interests or special conservation interests of a European Site. A source is any identifiable element of the Strategy provision that has potential to interact with ecological processes. The pathways are any connections or links between the source and the receptor. This report provides information on whether adverse effects on the integrity of European Sites could arise from the Strategy.

The report has been prepared taking into account legislation including the aforementioned legislation and guidance including the following:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2009.*
- *"Commission Notice: Managing Natura 2000 sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", European Commission 2018.*
- *"Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC", European Commission Environment DG, 2002.*
- *"Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC", European Commission, 2000.*

Section 2 Strategy Description and Context

The National Transport Authority, in collaboration with Cork City and County Councils, has developed the Strategy. It sets out a framework for the planning and delivery of transport infrastructure and services to support the development of the Cork Metropolitan Area², as shown on Figure 3.1, in the period up to 2040.

The Strategy takes its lead at national level from the National Planning Framework 2040 and the National Development Plan 2018-2027 and builds upon previous transport studies including Cork City Centre Movement Strategy, Cork Area Strategic Plan and the Cork Metropolitan Cycle Network Plan.

The Strategy will provide a coherent transport planning policy framework and implementation plan around which other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing and water can align their investment priorities.

The Vision is that the Strategy will deliver an integrated transport network that addresses the needs of all modes of transport, offering better transport choices, resulting in better overall network performance and providing capacity to meet travel demand and support economic growth.

To achieve this vision, the guiding principles upon which the Strategy is based are as follows:

1. To support the future growth of the CMA through the provision of an efficient transport network.
2. To prioritise sustainable transport and reduce car dependency within the CMA.
3. To provide a high level of public transport connectivity to key destinations within high demand corridors.
4. To identify and protect key strategic routes for the movement of freight and services including the provision of a high level of freight access to the Port of Cork.
5. To enhance the public realm through traffic management and transport interventions. #
6. To increase public transport capacity and frequencies where needed to achieve the strategy outcomes.

The Strategy consists of the following chapter headings under which investment priorities are provided:

1. Introduction
2. Policy Context
3. Existing Transport Context
4. CMATS³ 2040 Land Use
5. Strategy Development and Outcomes
6. Walking
7. Cycling
8. BusConnects
9. Suburban Rail
10. Light Rail
11. Parking
12. Public Transport Interchange and Integration
13. Roads
14. Freight, Delivery and Servicing
15. Supporting Measures
16. Implementation
17. Strategy Outcomes

Many proposals included within the Strategy have already been included in documents outlining public policy that have been subject to their own SEA including the National Planning Framework (and associated National Development Plan), Regional Spatial and Economic Strategy for the Southern Region and Cork City and County Development Plans. For more information on the Strategy's relationship with other plans and programmes please refer to Section 3.6.

² The study area for the Strategy includes Cork City, its suburbs and the towns and rural areas in the immediate hinterland of the City.

³ Cork Metropolitan Area Transport Strategy

Section 3 Screening for Appropriate Assessment

3.1 Introduction

This stage of the process identifies any potential significant affects to European Sites from the Strategy, either alone or in combination with other projects or plans.

An important element of the AA process is the identification of the “conservation objectives”, “Qualifying Interests” (QIs) and/ or “Special Conservation Interests” (SCIs) of European Sites requiring assessment. QIs are the habitat features and species listed in Annexes I and II of the Habitats Directive for which each European Site has been designated and afforded protection. SCIs are wetland habitats and bird species listed within Annexes I and II of the Birds Directive. It is also vital that the threats to the ecological / environmental conditions that are required to support QIs and SCIs are considered as part of the assessment.

The following NPWS Generic Conservation Objectives have been considered in the screening:

- For SACs, to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.
- For SPAs, to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Where available, Site-Specific Conservation Objectives (SSCOs), which define favourable conservation status for a particular habitat or species at that site, have been considered.

3.2 Identification of Relevant European Sites

Following the source-pathway-receptor process, a Precautionary Zone of Influence was used to screen European Sites. Having assessed the Strategy (including provisions relating to road works, walking and cycling network development, greenway development and upgrading of rail track), it was determined that a 15 km buffer (corresponding with the 2009 Department of Environment, Heritage and Local Government guidance) would be sufficient to provide a Precautionary Zone of Influence. All European Sites within the Precautionary Zone of Influence are assessed with specific reference to the sensitive receptors of each site and pathways for effects that relate to the ecological integrity of the site.

European Sites that occur within 15 km of the Strategy area are listed on Table 3.1 and illustrated on Figure 3.1. Information on qualifying features, special conservation interests and site-specific vulnerabilities and sensitivities (see Appendix I) and background information (such as that within Ireland’s Article 17 Report to the European Commission, site synopses and Natura 2000 standard data forms) has been considered by both the AA screening assessment (provided under this section) and Stage 2 AA (provided under Section 4). Conservation objectives that have been considered by the assessment are included in the following NPWS documents:

- NPWS (2014) Conservation Objectives: Great Island Channel SAC 001058. Version 1.
- NPWS (2014) Conservation Objectives: Cork Harbour SPA 004030. Version 1.
- NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0.
- NPWS (2014) Conservation Objectives: Ballycotton Bay SPA 004022. Version 1.
- NPWS (2018) Conservation Objectives for Sovereign Islands SPA [004124]. Generic Version 6.0.
- NPWS (2015) Conservation Objectives: Ballymacoda (Clonpriest and Pillmore) SAC 000077. Version 2.
- NPWS (2015) Conservation Objectives: Ballymacoda Bay SPA 004023. Version 1.
- NPWS (2018) Conservation Objectives for Blackwater Callows SPA [004094]. Generic Version 6.0.
- NPWS (2012) Conservation Objectives: Blackwater Estuary SPA 004028. Version 1.0.
- NPWS (2014) Conservation Objectives: Courtmacsherry Estuary SAC 001230. Version 1.
- NPWS (2016) Conservation Objectives: The Gearagh SAC 000108. Version 1.

The assessment considers available conservation objectives. Since conservation objectives focus on maintaining the favorable conservation condition of the QIs/SCIs of each site, the screening process concentrated on assessing the potential effects of the Strategy against the QIs/SCIs of each site. The conservation objectives for each site were consulted throughout the assessment process.

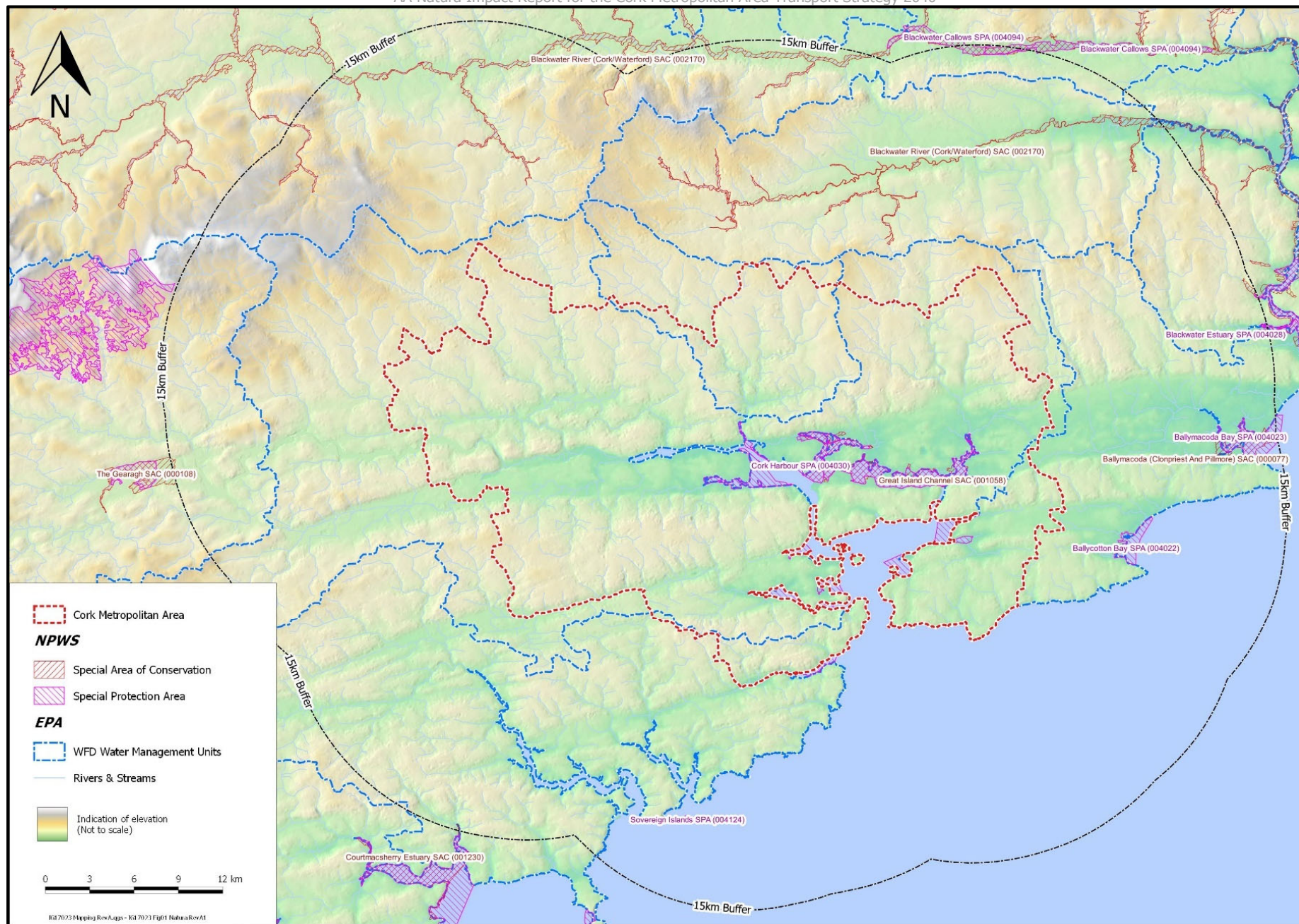


Figure 3.1 European sites within 15 km of the Cork Metropolitan Area

3.3 Assessment Criteria

3.3.1 Is the Plan Necessary to the Management of European Sites?

The primary purpose of the Strategy is not the nature conservation management of European Sites, but to help to deliver an accessible, integrated transport network that enables the sustainable growth of the Cork Metropolitan Area in combination with other plans and programmes. Therefore, the Strategy is not considered by the Habitats Directive to be directly connected with or necessary to the management of European designated sites.

3.3.2 Elements of the Strategy with Potential to Give Rise to Effects

It is intended that the Strategy will help to deliver an accessible, integrated transport network that enables the sustainable growth of the Cork Metropolitan Area, in combination with other plans and programmes, as a dynamic, connected, and internationally competitive European city region as envisaged by the National Planning Framework 2040.

The key areas of focus within the Strategy that may interact with ecological processes are:

- Shift from car to more sustainable and non-motorised transport modes;
- Managing traffic flows and associated adverse effects on air quality;
- Travel related greenhouse gas and other emissions to air;
- Development and use of transport infrastructure and services;
- Public assets and infrastructure such as: public open spaces, parks and recreational areas; public buildings and services; utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.);
- Reuse and regeneration of brownfield lands and interactions with efficiency of land utilisation, sustainable mobility and the need to develop greenfield lands;
- Waste management;
- Potential ground and surface waters interactions;
- Potential flood events;
- Potential soil interactions; and
- Potential interactions with features or areas of geological / geomorphological interest.

3.4 Types of Potential Effects and Changes

As outlined in the European Commission (2001) document *"Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC"* outlines the types of effects that may affect European Sites. These include effects from the following activities:

- Land take
- Resource Requirements (Drinking Water Abstraction etc.)
- Emissions (Disposal to Land, Water or Air)
- Excavation Requirements
- Transportation Requirements
- Duration of Construction, Operation, Decommissioning

In addition, the guidance document outlines the following potential changes that may occur at a designated site, which may result in effects on the integrity and function of that site:

- Loss/reduction of habitat area;
- Disturbance to key species;
- Habitat or species fragmentation;
- Reduction in species density;
- Changes in key indicators of conservation value (water quality etc.); and
- Climate change.

The operational phase of the Strategy will be consistent with land uses within the Cork Metropolitan Area. Vectors through which potential transport related emissions may be transported to interact with

European Sites include air (emissions to air including noise), soil (vibration) and water (emissions arising as a result of, for example, as spillages).

This report should be read in conjunction with the Strategy to contextualise effects. The provision of new infrastructure projects or maintenance/upgrading of existing roads and other transport infrastructure have the potential to introduce linear barriers to the free movement of species and/or to contribute towards pollutants, such as surface water run off during construction, if managed incorrectly. These elements are considered in relation to each of the European Sites identified with potential pathways for effects from the Strategy. Similarly, consideration is given throughout the assessment to the implication of infrastructure development within the Precautionary Zone of Influence and how this may interact with the European Sites identified.

3.5 Identification of Potential Effects and Screening of Sites

Table 3.1 examines whether there is potential for effects on each European Site – where effects are likely or where there is potential for effects, then these sites must be subject to Stage 2 AA.

3.6 Other Plans and Programmes

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or programmes that might, in combination with the plan or project, have the potential to adversely affect European Sites. Table 3.2 outlines plans or projects that were considered by this AA in the consideration of in-combination effects.

Given the uncertainties that exist with regard to the scale and location of developments facilitated by the Strategy, it is recognised that the identification of in-combination effects is limited and that, as is normal practice, the assessment of in-combination effects will need to be undertaken in a more comprehensive manner at the project-level.

3.7 AA Screening Conclusion

The effects that could arise from the Draft Strategy were examined in the context of a number of factors that could potentially affect the integrity of any European Site. On the basis of the findings of this Screening for AA, it was concluded that the Draft Strategy:

- Is not directly connected with or necessary to the management of a European Site; and
- May, if unmitigated, have significant adverse impacts on two European Sites - the Great Island Channel SAC and the Cork Harbour SPA.

Therefore, Stage 2 AA was determined as being required (see Section 4 of this report). An Ancillary AA determination is provided at Figure 3.2.

Ancillary AA determination, further to the main AA Natura Impact Report

under the
European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended)
for the
Cork Metropolitan Area Transport Strategy 2040

Appropriate Assessment (AA) screening

This ancillary determination is ancillary to both:

- The Authority's AA Natura Impact Report that is placed on public display alongside the Draft Strategy; and
- The Authority's AA determination that is made in advance of finalisation of the Strategy, following public display.

In making the determination that AA is required, the information contained in the AA Natura Impact Report (that is placed on public display alongside the Draft Strategy) on the potential effects on European Sites arising from the Strategy is taken into account.

That information has been carefully considered and its reasoning and conclusion agreed with and adopted – allowing the AA Natura Impact Report to conclude at the end of Section 3 “Screening for Appropriate Assessment” of the Natura Impact Report that Stage 2 AA is required. It has been determined that the Strategy may have effects on a number of European Sites - therefore, Stage 2 AA (including the preparation of the NIR) is required for the Strategy (see Natura Impact Report subsection 3.7 “AA Screening Conclusion”).


Signed:
Signatory
Approved Officer

Figure 3.2 Ancillary AA Determination

Table 3.1 Screening of European Sites within 15 km of the Cork Metropolitan Area to which the Strategy relates

Site Code	European Site	Distance (km)	Potential effects	Pathway for Significant Effects	Potential for In-Combination Effects
001058	Great Island Channel SAC	Within	The site is within the Strategy area, therefore potential effects to the ecological integrity of the site may occur.	Yes	Yes
004030	Cork Harbour SPA	Within	The site is within the Strategy area, therefore potential effects to the ecological integrity of the site may occur.	Yes	Yes
002170	Blackwater River (Cork/Waterford) SAC	2.46	The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas and invasion by non-native species (e.g. Rhododendron and Cherry Laurel). The targets and attributes of the SSCOs relate to the structure, function and community dynamics of the SAC. These are sensitive to water quality and local land use management effects. There are no policies or objectives within the Strategy that interact with these processes and there is no hydrological connectivity. Therefore, there are no sources or pathways for effects to the ecological integrity of the SAC.	No	No
004022	Ballycotton Bay SPA	3.74	There are no site-specific threats identified by the NPWS. The species for which this site is designated are sensitive to disturbance effects through noise pollution and land use activities. Habitat quality and prey availability are directly related to water quality and hydrological condition. There are no policies or objectives within the Strategy that impose any land use pressures on this site. Disturbance effects to bird species are known to exist at a local scale, distances beyond 2 km are reported to be sufficient to remove potential effects ("A Review of Disturbance Distances in Selected Bird Species", Scottish Natural Heritage, 2007). Therefore, the Strategy will not introduce any disturbance effects to the SCIs of the site. The site is not hydrologically connected to the Cork Metropolitan Area and the SPA. Therefore, there will be not effects to the water quality or habitat condition.	No	No
004124	Sovereign Islands SPA	9.29	There are no site-specific threats identified by the NPWS. The species for which this site is designated are sensitive to disturbance effects through noise pollution and land use activities. Habitat quality and prey availability are directly related to water quality and hydrological condition. There are no policies or objectives within the Strategy that impose any land use pressures on this site. Disturbance effects to bird species are known to exist at a local scale, distances beyond 2 km are reported to be sufficient to remove potential effects. Therefore, the Strategy will not introduce any disturbance effects to the SCIs of the site. The site is not hydrologically connected to the Cork Metropolitan Area and the SPA. Therefore, there will be not effects to the water quality or habitat condition.	No	No
000077	Ballymacoda (Clonpriest And Pillmore) SAC	9.84	Water pollution from aggressive land uses such as intensive agriculture are the biggest threat to the site. The targets and attributes of the SSCOs relate to the structure, function and community dynamics of the SAC. These are sensitive to water quality and local land use management effects. There are no policies or objectives within the Strategy that interact with these processes and there is no hydrological connectivity. Therefore, there are no sources or pathways for effects to the ecological integrity of the SAC.	No	No
004023	Ballymacoda Bay SPA	11.04	There are no site-specific threats identified by the NPWS. The species for which this site is designated are sensitive to disturbance effects through noise pollution and land use activities. Habitat quality and prey availability are directly related to water quality and hydrological condition. There are no policies or objectives within the Strategy that impose any land use pressures on this site. Disturbance effects to bird species are known to exist at a local scale, distances beyond 2 km are reported to be sufficient to remove potential effects. Therefore, the Strategy will not introduce any disturbance effects to the SCIs of the site. The site is not hydrologically connected to the Cork Metropolitan Area and the SPA. Therefore, there will be not effects to the water quality or habitat condition.	No	No
004094	Blackwater Callows SPA	14.32	There are no site-specific threats identified by the NPWS. The species for which this site is designated are sensitive to disturbance effects through noise pollution and land use activities. Habitat quality and prey availability are directly related to water quality and hydrological condition. There are no policies or objectives within the Strategy that impose any land use pressures on this site. Disturbance effects to bird species are known to exist at a local scale, distances beyond 2 km are reported to be sufficient to remove potential effects. Therefore, the Strategy will not introduce any disturbance effects to the SCIs of the site. The site is not hydrologically connected to the Cork Metropolitan Area and the SPA. Therefore, there will be not effects to the water quality or habitat condition.	No	No
004028	Blackwater Estuary SPA	14.42	There are no site-specific threats identified by the NPWS. The species for which this site is designated are sensitive to disturbance effects through noise pollution and land use activities. Habitat quality and prey availability are directly related to water quality and hydrological condition. There are no policies or objectives within the Strategy that impose any land use pressures on this site. Disturbance effects to bird species are known to exist at a local scale, distances beyond 2 km are reported to be sufficient to remove potential effects. Therefore, the Strategy will not introduce any disturbance effects to the SCIs of the site. The site is not hydrologically connected to the Cork Metropolitan Area and the SPA. Therefore, there will be not effects to the water quality or habitat condition.	No	No
001230	Courtmacsherry Estuary SAC	14.6	The NPWS identify that cord-grass on parts of the mudflats poses a threat to the quality of the area for feeding birds; however, birds are not a designated feature of the SAC and cord-grass is a characteristic species of the Atlantic Salt Meadows which the site is designated. The targets and attributes of the SSCOs relate to the structure, function and community dynamics of the SAC. These are sensitive to water quality and local land use management effects. There are no policies or objectives within the Strategy that interact with these processes and there is no hydrological connectivity. Therefore, there are no sources or pathways for effects to the ecological integrity of the SAC.	No	No
000108	The Gearagh SAC	14.7	Land use management is the primary threat to the site identified by the NPWS. The SSCOs of the site relate to the structure and function of the habitat features at a local level. There are no hydrological pathways for effects to the SAC. Similarly, there are no provisions in the Strategy that will affect land use processes on site. Taking the sensitivities of the habitat features into account and the characteristics of the Strategy, there are no pathways for effect to the SAC.	No	No

Table 3.2 Other Plans or Programmes etc. considered by the AA Screening

Directive	Purpose	Interactions resulting in in-combination effects
National / Regional		
Ireland 2040 - Our Plan, the National Planning Framework (and associated National Development Plan)	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.	Potential in-combination impacts may arise where there is a requirement to provide new transport services infrastructure.
Investing in our Transport Future – A Strategic Investment Framework for Land Transport	The Framework establishes: high level priorities for future investment in land transport; and key principles, reflective of those priorities, to which transport investment proposals will be required to adhere.	The Framework has undergone assessment and potential impacts on European sites have been mitigated against with the inclusion of guidance measures to accompany the funding of proposals.
Smarter Travel – A Sustainable Transport Future A New Transport Policy for Ireland 2009 - 2020	This initiative promotes the use of alternative travel, i.e. walking, cycling, car-pooling.	No potential for in-combination impacts are foreseen.
Grid 25	Grid25 is a high-level strategy outlining how EirGrid intends to undertake the development of the electricity transmission grid in the short, medium and longer terms, to support a long-term sustainable and reliable electricity supply. The Grid25 strategy thereby seeks to implement the provisions of the 2007 Government White Paper on Energy - "Delivering a Sustainable Energy Future for Ireland" in terms of development of electricity transmission infrastructure. The Grid25 Implementation Programme is a practical strategic overview of how the early stages of Grid25 are intended to be implemented.	Potential in-combination impacts may arise where there is a requirement to provide new water services infrastructure.
National Renewable Energy Action Plan	The National Renewable Energy Action Plan sets out the Government's strategic approach and concrete measures to deliver on Ireland's 16% target under Directive 2009/28/EC. The 16% target relates to Ireland having 16% of its energy from renewable sources by 2020.	Potential for in-combination impacts from the development of renewable energies which may potentially increase pressures on sensitive habitats and species during its development. Potential in-combination impacts may lead to: habitat loss; disturbance to key species; fragmentation; and changes to key features of conservation concern.
Harvest 2020	Aims to innovate and expand the Irish food industry in response to increased global demand for quality foods. Sets out a vision for the potential growth in agricultural output after the removal of milk quotas in 2015.	Potential in-combination impacts may arise due to increased pressures on the water environment associated with an intensification of agriculture. Potential in-combination impacts may lead to: habitat loss; disturbance to key species; fragmentation; and changes to key features of conservation concern.
Regional Planning Guidelines for the South West Region 2010 – 2022, to be replaced by Regional Spatial and Economic Strategy	Regional Planning Guidelines provide long-term strategic planning frameworks and will be replaced by Regional Spatial and Economic Strategies (RSEs). The Regional Spatial and Economic Strategies will provide a long-term regional level strategic planning and economic framework in support of the implementation of the National Planning Framework. Each one of the three Regional Assemblies have prepared RSEs. The Cork Metropolitan Area is located within the Southern Regional Assembly area.	Potential in-combination impacts may arise due to increased pressures on the water environment associated with a potential infrastructure development to facilitate economic growth. Potential in-combination impacts may lead to: habitat loss; disturbance to key species; fragmentation; and changes to key features of conservation concern.
River Basin Management Plans	River Basin Management Plans outline the management of river basins in terms of the reduction of pollution in keeping with the Water Framework Directive.	No potential for in-combination impacts as these management plans provide for cleaner and less polluted ground and surface water.
Groundwater Protection Schemes	These schemes have been adapted to control and restore polluted groundwater sources.	No potential for in-combination impacts as these management plans provide for cleaner and less polluted groundwater.
Water Quality Management Plans	Water Quality Management Plans outline the management of river basins in terms of the reduction of pollution in keeping with the Water Framework Directive.	No potential for in-combination impacts as these management plans provide for cleaner and less polluted ground and surface water.
Forests, Products and People. Ireland's Forest Policy - A Renewed Vision	Outlines a framework for developing an internationally competitive and sustainable forestry sector that provides a range of economic, environmental and social benefits.	Potential in-combination impacts may arise due to any increased pressures on the water environment associated with forestry activities in sensitive areas.
Local		
Cork City and County Development Plans and Local Area Plans	Overall strategies for the proper planning and sustainable development of the relevant areas within the Cork Metropolitan Area.	Potential in-combination impacts arising from interactions between land use and transport development.
Green Infrastructure Plans/Strategies	These Plans include the promotion of tourism within Ireland's rivers and lakes.	Potential for in-combination effects through potential amplification of pressures on habitats.
Freshwater Pearl Mussel Sub-Basin Management Plans	Sub-basin management plans have been produced to act alongside the wider River Basin Management Plans to provide a programme of measures required to improve the habitat of the freshwater pearl mussel so that it can attain favourable conservation status.	No potential for in-combination impacts as these plans provide for the safeguarding the integrity of Fresh Water Pearl Mussels.
Local/County Water Services Strategic Plans	These Plans form the legislative basis for the revised policy on water charges including the capped charges agreed by the Government and the late payment fees, the proposal for the holding of a plebiscite in relation to any future proposal to change the ownership structure of Irish Water, the introduction of a new water conservation grant, the establishment of a public water forum, a statutory dispute resolution system and a number of other associated measures.	No potential for in-combination impacts as the plans do not relate to physical development.
Lower Lee Flood Relief Scheme 2013-2019	This flood relief scheme is to alleviate flooding issues faced in cork city over the past decade. The works have been granted planning permission and the 12-month construction phase works have begun.	Any effects from the flood relief scheme will be temporary. The AA undertaken identified that the 'Lee CFRMP will not adversely affect the integrity of any Natura 2000 Site'. Potential interactions with water quality could occur as a result of the interactions between the Strategy and this scheme.

Section 4 Stage 2 Appropriate Assessment

4.1 Introduction

The Stage 2 AA assesses whether the Strategy alone, or in-combination with other plans, programmes, and/or projects, would result in adverse impacts on the integrity of the two European Sites brought forward from screening (see Section 4.1), with respect to site structure, function and/or conservation objectives.

4.2 Characterisation of European Sites Potentially Affected

The AA Screening identified two European Sites with pathway receptors for potential impacts. Table 4.1 characterises each of the qualifying features of these sites.

Table 4.1 Characterisation of the Qualifying Features of each of the European Sites potentially impacted upon by the Strategy

Site Code	Site Name	Distance (km)	Qualifying features (Qualifying Interests or Special Conservation Interests)	Site Description (Site Vulnerability/Sensitivity)
001058	Great Island Channel SAC	Within	Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	<p>The Great Island Channel stretches from Little Island to Middleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour that contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owenacurra and Dungourney Rivers. These rivers, which flow through Middleton, provide the main source of freshwater to the North Channel.</p> <p>While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.</p>
004030	Cork Harbour SPA	Within	<p>Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Grey Heron (<i>Ardea cinerea</i>) [A028] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Red-breasted Merganser (<i>Mergus serrator</i>) [A069] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] Common Tern (<i>Sterna hirundo</i>) [A193] Wetland and Waterbirds [A999]</p>	<p>Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poul nabibe inlets.</p> <p>No site-specific threats were identified by the NPWS.</p>

4.3 Identifying and Characterising Potential Significant Effects

The following parameters are described when characterising impacts⁴:

Direct and Indirect Impacts - An impact can be caused either as a direct or as an indirect consequence of a proposed development.

Magnitude - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

Extent - The area over which the impact occurs – this should be predicted in a quantified manner.

Duration - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated; and
- Permanent: The effects would take 60+ years to be mitigated.

Likelihood – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted; and
- Extremely Unlikely: <5% chance as occurring as predicted.

Ecologically Significant Impact - An impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area.

Integrity of a Site - The coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of the features of interest within a site. SSCOs have been prepared for a number of European Sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

***Favourable conservation status of a species** can be described as being achieved when: 'population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.'*

***Favourable conservation status of a habitat** can be described as being achieved when: 'its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable.'*

Generic Conservation Objective for cSACs:

- *To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.*

Generic Conservation Objective for SPAs:

- *To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.*

Assessment of potential impacts on European Sites is conducted utilising a standard source-pathway model (see approach referred to under Section 1.3).

⁴ These descriptions are informed by publications including: Chartered Institute of Ecology and Environmental Management (2016) "Guidelines for ecological impact assessment"; Environmental Protection Agency (2002) "Guidelines on the Information to be contained in Environmental Impact Statements"; and National Roads Authority (2009) "Guidelines for Assessment of Ecological Impacts of National Roads Schemes".

The 2001 European Commission AA guidance outlines the following potential changes that may occur at a designated site, which may result in effects on the integrity and function of that site:

- Loss/reduction of habitat area;
- Disturbance to key species;
- Habitat or species fragmentation;
- Reduction in species density;
- Changes in key indicators of conservation value (water quality etc.); and
- Climate change.

Each of these potential changes are considered below and in Table 4.2 with reference to the QIs/SCIs of all of the European Sites brought forward from Stage 1 of the AA process (see Section 3).

4.3.1.1 Reduction of Habitat Area

Given the uncertainties that exist regarding the scale and location of developments facilitated by the Strategy, it is recognised that all projects that arise as a result of the Strategy will be subject to their own AA processes to ensure the protection of European Sites. Similarly, the mitigation measures proposed ensure that ecological considerations will be incorporated into route selection processes to ensure the protection of European Sites. In recognition of certain projects provided for in locations within/in the vicinity of European Sites, the phrase “subject to compliance with the EU Habitats and/or Birds Directives” is being included after certain projects/types of projects, including in Chapters No. 7 “Cycling”, 9 “Suburban Rail” and 13 “Roads”.

4.3.1.2 Fragmentation

The Great Island Channel SAC and Cork Harbour SPA are both coastal areas. Cork Harbour SPA exists in a highly development industrial urban context and the SCIs are habitualised to anthropogenic activities. There are no threats identified by the NPWS in relation to habitat fragmentation or the existing condition of the site. The designated features of the Great Island Channel SAC are coastal habitats and the connectivity of these habitats will not be affected by the Strategy. The mitigation measures that have been integrated into the Strategy ensure that ecological considerations will be incorporated into route selection processes to ensure the protection of European Sites.

4.3.1.3 Disturbance to Key Species

Both sites taken to Stage 2 AA have pathways for potential significant effects identified and are within the wider Cork City area; these are urbanised designations and the populations are habitualised to anthropogenic disturbance. This is exemplified in the SSCOs of the Cork Harbour SPA⁵. Nevertheless, the Strategy stipulates that lower tier plans must consider environmental effects during corridor and route selection processes. Potential sources of disturbance to biodiversity include noise, vibration, light, construction and operation activities or other sources of disturbance arising from construction of transport infrastructure and the inappropriate timing of works. This AA and the associated Strategic Environmental Assessment undertaken alongside the Strategy have considered these potential effects and have facilitated the integration of mitigation measures into the Strategy to reduce and where possible avoid effects to biodiversity, including key species. Measures have also been integrated into the Strategy that will help ensure that projects permitted under the Strategy are in compliance with the EU Habitats Directive.

4.3.1.4 Changes of Indicators of Conservation Value

The sensitive receptors for the two European sites brought forward from Stage 1 AA are water quality, including sediment characteristics and the subsequent potential effects to trophic structures. Effects to these sites may occur due to the hydrological connection between the sites and projects that may occur under the Strategy. Implementation of the Strategy could result in alterations to the hydrological regime or physical environment of the sites due to vibrations, alteration of flow regime, and discharges of pollutants to watercourses. This AA and the associated Strategic Environmental Assessment undertaken alongside the Strategy have considered these potential effects and have facilitated the integration of mitigation measures into the Strategy to reduce and where possible avoid effects to biodiversity. Further measures have been integrated into the Strategy to address issues including protection of water quality and vibration, including the preparation of Construction and Environmental Management Plans.

⁵ Available at <https://www.npws.ie/protected-sites/spa/004030>

4.3.1.5 Climate Change

Parts of the Strategy facilitate contribution towards reductions in travel related greenhouse gas emissions to air while part of the Strategy will result in travel related greenhouse gas emissions to air. Such effects upon greenhouse gas emissions will not affect changes projected to arise from climate change to the degree that it would affect the trophic structure of the wetland habitats of the Cork Harbour SPA. Similarly, the Great Island Channel SAC is designated for deposition habitats that are tolerant to climate change interactions.

Table 4.2 Characterisation of Potential Effects arising from the Strategy

Site Code	Site Name	Distance (km)	Qualifying features (Qualifying Interests or Special Conservation Interests)	Characterisation of Potential Effects	Potential Significant Effects	Mitigation Required
001058	Great Island Channel SAC	Within	Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	<p>While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.</p> <p>The Strategy provides for the development of transport infrastructure, including road works, walking and cycling network development, greenway development and upgrading of rail track; such proposed infrastructure works that may affect the site.</p> <p>Mitigation measures have been incorporated into the Strategy to ensure ecological considerations are made throughout the development of any project that arises through the implementation of the Strategy. This includes Section X (.).⁶ "Lower-level Decision Making" and Section X.3 "Corridor and Route Selection Process for relevant new infrastructure" X.3 "Corridor and Route Selection Process".</p> <p>The mitigation measures that have been integrated into the Strategy have been developed taking into account the conservation objectives of the SAC. The Strategy is a high-level plan that does not contain project level detail – such details are not yet known. The mitigation measures focus of the processes that must be followed in relation to lower tier project development to ensure the ecological integrity of European Sites are considered at all stages during the implementation of the Strategy.</p>	Yes	Yes
004030	Cork Harbour SPA	Within	Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] Cormorant (<i>Phalacrocorax carbo</i>) [A017] Grey Heron (<i>Ardea cinerea</i>) [A028] Shelduck (<i>Tadorna tadorna</i>) [A048] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Shoveler (<i>Anas clypeata</i>) [A056] Red-breasted Merganser (<i>Mergus serrator</i>) [A069] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] Common Tern (<i>Sterna hirundo</i>) [A193] Wetland and Waterbirds [A999]	<p>The Strategy provides for the development of transport infrastructure, including road works, walking and cycling network development, greenway development and upgrading of rail track; such proposed infrastructure works that may affect the site.</p> <p>There are no site-specific threats identified by the NPWS. This site is designated for non-breeding wading bird species during the winter period which have known sensitivities to disturbance effects and water quality interactions.</p> <p>The SCIs are dependent on the intertidal mud and sand flats, as well as the shallow subtidal inlets and lagoons. The SCIs do not identify any non-coastal habitat as being of any importance for the ecological integrity of the site. The data supporting the SSCO identifies powerboats and dog walkers to be the cause of disturbance effects and no records of traffic related disturbances. This SPA is located within the wider Cork City area and the populations are therefore habituated to indirect disturbance effects.</p> <p>Given the uncertainties that exist regarding the scale and location of developments facilitated by the Strategy, it is recognised that all projects that arise as a result of the Strategy will be subject to their own AA processes to ensure the protection of European Sites. Similarly, the mitigation measures proposed ensure that ecological considerations will be incorporated into route selection processes to ensure the protection of European Sites. In recognition of certain projects provided for in locations within/in the vicinity of European Sites, the phrase "subject to compliance with the EU Habitats and/or Birds Directives" has been included after these projects where they are listed in the Strategy document. These projects are as follows:</p> <p>Any potential interactions with water quality will result through the implementation of the Strategy are associated with infrastructure development which will be managed through CEMPs as detailed in the mitigation measures below. The Strategy is a high-level plan that provides a framework for sustainable planning of transport systems in the cork metropolitan area. All lower tiered projects that arise from the implementation of the Strategy must comply with the policies and objectives of the Strategy as well as all relevant development policies and objectives within the Cork County Development Plan and all other relevant land use planning documents.</p> <p>Potential site run-off from the introduction of any potential sources for pollution could influence the water quality. These potential effects require mitigation that are incorporated into the Strategy.</p>	Yes	Yes

⁶ Section numbers to be confirmed

Section 5 Mitigation Measures

The AA and the associated Strategic Environmental Assessment (SEA) undertaken alongside the Strategy have considered potential effects on biodiversity and have facilitated the integration of mitigation measures into the Strategy to reduce and where possible avoid effects to biodiversity, including the integrity of European Sites.

All recommendations made by the AA and SEA were integrated into the Strategy, including those related to biodiversity that are identified on Table 5.1 and 5.2.

Table 5.1 Measures being incorporated into the text of the Strategy

Strategy Section No.	SEA/AA Recommended Text
1. Introduction	AA The AA concludes that it is considered that the Strategy will not have a significant adverse effect on the integrity of the Natura 2000 network of sites ⁷ . The details of the approach to the AA and the findings are set out in the AA Natura Impact Report that accompanies the Strategy. In a similar manner to the Environmental Report of the SEA, this separate document should be read and considered in parallel with the Strategy.
7. Cycling	Insertion of footnote: "Subject to compliance with the EU Habitats and/or Birds Directives."
9. Suburban Rail	Insertion of footnote: "Subject to compliance with the EU Habitats and/or Birds Directives."
13. Roads	Insertion of footnote: "Subject to compliance with the EU Habitats and/or Birds Directives."
17. Environmental Protection and Management	Recommend insertion of new Section entitled "Environmental Protection and Management" which integrates the measures detailed below into the Transportation Strategy. 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, including compliance with EU Directives - including the Habitats Directive (92/43/EEC, as amended), 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.
17. Environmental Protection and Management	Lower-level Decision Making Lower levels of decision making and environmental assessment should consider the sensitivities identified in Section 4 of the SEA Environmental Report, including the following: <ul style="list-style-type: none"> • Special Areas of Conservation and Special Protection Areas; • Features of the landscape that provide linkages/connectivity to designated sites (e.g. watercourses, areas of semi-natural habitat such as linear woodlands etc); • Salmonid waters; • Shellfish waters; • Freshwater pearl mussel catchments; • Natural Heritage Areas and proposed Natural Heritage Areas; • Areas likely to contain a habitat listed in Annex 1 of the Habitats Directive; • Un-designated sites of importance to wintering or breeding bird species of conservation concern; • Entries to the Record of Monuments and Places and Zones of Archaeological Potential; • Entries to the Record of Protected Structures; • Architectural Conservation Areas; and • Relevant landscape designations.
17. Environmental Protection and Management	Corridor and Route Selection Process for relevant new infrastructure The following Corridor and Route Selection Process will be undertaken for relevant new infrastructure: Stage 1 – Route Corridor Identification, Evaluation and Selection <ul style="list-style-type: none"> • Environmental constraints (including those identified in Section 4 of the SEA Environmental Report) and opportunities (such as existing linear infrastructure) will assist in the identification of possible route corridor options; • Potentially feasible corridors within which infrastructure could be accommodated will be identified and these corridors assessed. The selection of the preferred route corridor will avoid constraints and meet opportunities to the optimum extent, as advised by the 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 <ul style="list-style-type: none"> • Potentially feasible routes within the preferred corridor will be identified and assessed. The selection of preferred routes will avoid constraints and meet opportunities to the optimum extent, as advised by the relevant specialists, taking into account project level information and potential mitigation measures that are readily achievable; • In addition to the constraints identified above, site specific field data may be required to identify the most appropriate routes; and • In addition to environmental considerations, the identification of route corridors and the refinement of route lines is likely to be informed by other considerations.
17. 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: <ol style="list-style-type: none"> 1. The plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or 2. 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

⁷ 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/strategy/project etc. to proceed; and
- c) Adequate compensatory measures in place

Strategy Section No.	SEA/AA Recommended Text
	3. The plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.
17. Environmental Protection and Management	Protection of European Sites No plans or projects giving rise to significant cumulative, direct, indirect or secondary impacts on European sites 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 ⁸).
17. Environmental Protection and Management	Other SEA Recommendations In implementing the Strategy, the Authority will ensure that the mitigation measures included in Table 9.3 of the SEA Environmental Report are complied with.

Table 5.2 Provisions to be referred to in the Strategy under “Other SEA Recommendations” related to Biodiversity

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 larger 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: <ul style="list-style-type: none"> a. location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse, b. location of areas for construction site offices and staff facilities, c. details of site security fencing and hoardings, d. details of on-site car parking facilities for site workers during the course of construction, e. details of the timing and routing of construction traffic to and from the construction site and associated directional signage, f. measures to obviate queuing of construction traffic on the adjoining road network, g. measures to prevent the spillage or deposit of clay, rubble or other debris, h. alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public right of way during the course of site development works, i. details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels, j. containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater, k. disposal of construction/demolition waste and details of how it is proposed to manage excavated soil, l. a water and sediment management plan, providing for means to ensure that surface water runoff is controlled such that no silt or other pollutants enter local water courses or drains, m. details of a water quality monitoring and sampling plan. n. if peat is encountered - a peat storage, handling and reinstatement management plan. o. measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed). p. appointment of an ecological clerk of works at site investigation, preparation and construction phases. q. details of appropriate mitigation measures for lighting specifically designed to minimise impacts to biodiversity, including bats.
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 focusses significant levels of investment in sustainable transport modes and other climate related provisions integrated into the Strategy. 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 Cork Agglomeration and Major Roads in the Cork County Area (including provisions relating to the preservation of Quiet Areas); and reductions in energy usage.

⁸ 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/strategy/project etc. to proceed; and
- c) Adequate compensatory measures in place.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
		Climate Adaptation and Resilience Improve resilience and adaptation to climate change by taking into account issues including the following in the siting and design of projects: <ul style="list-style-type: none"> • Extreme precipitation and risk of high river flows and associated implications including those relating to pluvial and fluvial flooding, bridge scour, soil erosion and landslides; • Sea level rise and storm surge and associated implications including those relating to coastal erosion and coastal 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.
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; Wildlife Sites (including Nature Reserves); Certain entries to the Water Framework Directive Register of Protected Areas; Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs); Wildfowl Sanctuaries (see S.I. 192 of 1979); and Tree Preservation Orders (TPOs). Contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents): <ul style="list-style-type: none"> • EU Directives, including the Habitats Directive (92/43/EEC, as amended)⁹, the Birds Directive (2009/147/EC)¹⁰, the Environmental Liability Directive (2004/35/EC)¹¹, 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 Wildlife (Amendment) Act 2000, 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 2008¹² 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 2016 - An Assessment (EPA, 2016, 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 protection 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.

⁹ Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

¹⁰ Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

¹¹ Including protected species and natural habitats.

¹² Including protected species and natural habitats.

Environmental component benefitting	Potential adverse effect mitigated	Requirement
		<p>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.</p> <p>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.</p> <p>Help to ensure the appropriate protection of non-designated habitat features, landscapes and biological diversity.</p> <p>Proposals for development under the Strategy will seek to avoid impacts on the Atlantic Pond (off The Marina) and immediate surrounding area.</p> <p>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.</p> <p>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.</p> <p>National Peatlands Strategy Support, as appropriate, any relevant recommendations contained in the National Peatlands Strategy 2015.</p>
Material Assets	<ul style="list-style-type: none"> - Generation of construction waste - Loss or damage to built/amenity assets and infrastructure including as a result of new or widened transport infrastructure 	<p>Also see Construction and Environmental Management Plans provision above</p> <p>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.</p> <p>Waste Creation Support the minimisation of waste creation and promote a practice of reduce, reuse and recycle where possible.</p> <p>Waste Disposal Safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.</p> <p>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.)</p>
Water	<ul style="list-style-type: none"> - Adverse impacts upon the status of water bodies and entries to the WFD Register of Protected Areas, arising from changes in quality, flow and/or morphology - Increase in the risk of flooding 	<p>Also see Construction and Environmental Management Plans provision above and measures under soil above and material assets below</p> <p>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.</p> <p>River Basin Management Plan Support the implementation of the relevant recommendations and measures as outlined in the River Basin Management Plan 2018-2021, and associated Programme of Measures, or any such plans that may supersede same during the lifetime of the Strategy. 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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

Environmental component benefitting	Potential adverse effect mitigated	Requirement
Landscape	Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape	<p>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.</p> <p>Amenity Contribute towards the protection of areas of amenity value and minimise losses, as a result of the development of new or widened infrastructure.</p> <p>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.</p> <p>National Landscape Strategy Support, as appropriate, any relevant recommendations contained in the National Landscape Strategy for Ireland 2015-2025.</p>
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.	<p>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).</p> <p>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.</p> <p>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.</p> <p>Consultation Consult with the National Monuments Service of the Department of Arts Heritage and the Gaeltacht in relation to proposed developments adjoining archaeological sites.</p> <p>Underwater Archaeological Sites Contribute, as appropriate, towards the protection and preservation of underwater archaeological sites in riverine, intertidal and sub-tidal locations.</p> <p>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).</p> <p>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.</p>
Soil	<p>- Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of transport and associated transport facilities/ infrastructure.</p> <p>- Adverse impacts on features or areas of geological / geomorphological interest as a result of construction of transport and associated transport facilities/ infrastructure.</p> <p>- Potential for increase in coastal /river bank erosion.</p>	<p>Also see requirements under other heading of water above.</p> <p>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.</p> <p>Areas of geological interest Contribute towards the appropriate protection and maintenance of the character, integrity and conservation value of features or areas of geological interest.</p> <p>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%."</p>

Section 6 Conclusion

Stage 1 Screening and Stage 2 AA for the Cork Metropolitan Area Draft Transport Strategy 2040 is being carried out. The implementation of the Strategy has the potential to result in effects to the integrity of any European Sites, if unmitigated.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European Sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided. In addition, all lower level plans and projects arising through the implementation of the Strategy will themselves be subject to AA/screening for AA when further details of design and location are known.

In-combination effects from interactions with other plans and projects were considered in the assessment and the mitigation measures incorporated into the Strategy are determined to be robust to ensure there will be no significant adverse effects as a result of the implementation of the Strategy either alone or in-combination with other plans/projects.

By incorporating mitigation measures, it is considered that the Cork Metropolitan Area Transport Strategy 2040 will not give rise to any effect on the ecological integrity of any European Site, alone or in combination with any other plans, programmes or projects¹³. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated.

¹³ 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/strategy/project etc. to proceed; and
c) Adequate compensatory measures in place.