

NATURA IMPACT REPORT

IN SUPPORT OF THE

APPROPRIATE ASSESSMENT

FOR THE

INTEGRATED IMPLEMENTATION PLAN 2019-2024

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 is a Natura Impact Report¹ in support of the Appropriate Assessment (AA) of the Integrated Implementation Plan 2019-2024 in accordance with the requirements of Article 6(3) of the EU Habitats Directive of 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").

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.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the European Sites at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations (in particular Part XAB of the Planning and Development (Amendment) Act 2010 and the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) to ensure the ecological integrity of these sites. AA is an assessment of whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a European Site in view of the Site's conservation objectives.

1.2 Legislative Context

AA is an assessment of the potential for adverse or potential adverse 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.

The Habitats Directive provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. In Ireland, these are SACs and SPAs, designated under the Birds Directive, hereafter referred to as European Sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European Sites. Article 6(3) establishes the requirement for AA:

"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to

¹ Also referred to as Natura Impact Statement

ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to 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."

These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). These regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in judgements of the Court of Justice of the European Union.

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project may nevertheless be carried out for "Imperative Reasons of Overriding Public Interest", including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to 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.

1.3 Guidance

This Natura Impact Report has been prepared in accordance with the following guidance:

- *AA of Plans and Projects in Ireland. Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2010.*
- *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.*
- *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, Office for Official Publications of the European Communities, Luxembourg (EC, 2001).*
- *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission, Office for Official Publications of the European Communities, Luxembourg (EC, 2007).*
- *Flora (Protection) Order, 1999 (as amended).*

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 Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives. The EPA Envision Map-viewer (www.epa.ie) and available reports were also reviewed.

Definitions of conservation status, integrity and significance used in this assessment are defined in accordance with 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2000).

- The conservation status of a natural habitat is defined as the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species;
- The conservation status of a species is defined as the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its population;
- The integrity of a European Site is defined as the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified; and
- Significant effect should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's conservation objectives.

1.4 Approach

There are four main stages in the AA process; the requirements for each depending on likely impacts to European Sites (SACs and SPAs).

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: AA

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 proposed to ensure no significant adverse impacts on European Sites, then the process may end at this stage. However, if the likelihood of significant impacts remains, then the process must proceed to Stage 3.

Stage Three: Assessment of Alternative Solutions

The process which 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, it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the plan should aim to avoid any impacts on European Sites by identifying possible impacts early in the plan-making process and writing the plan in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the plan is still likely to result in impacts on European Sites, and no further practicable mitigation is possible, then it must be rejected. If no alternative solutions are identified and the plan is required for imperative reasons of overriding public interest under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

1.4.1 Source-Pathway-Receptor Model

Ecological impact 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 proposed 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 which 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 Integrated Implementation Plan that has the potential to have interactions with ecological processes. The pathways are any connections or links between the source and the receptor. This report determines if direct, indirect and cumulative adverse effects (however minor) will arise from the Implementation Plan.

1.4.2 Zone of Influence

Following the source-pathway-receptor process a core Zone of Influence (ZOI) is determined based on the characteristics of the Plan (detailed in Section 2) and the foreseen distribution of likely effects through any pathways is identified. All European Sites within the ZOI are assessed with specific reference to the sensitive receptors of each site and pathways for effect that relate to the ecological integrity of the site.

1.5 Relationship between the AA process and the Implementation Plan

AA is fully integrated with the various stages of the Integrated Implementation Plan preparation process in order to help to ensure that the Plan does not adversely affect the integrity of European Sites. The screening and subsequent assessment of the Implementation Plan provisions, in the context of mitigation measures and potential effects on European Sites, has been an iterative process throughout each stage of the Plan-making process.

Section 2 Description of and background to the Plan

2.1 Requirement for an Integrated Implementation Plan

The Minister for Transport, Tourism and Sport approved the Greater Dublin Area Transport Strategy 2016-2035 on 24th February 2016.

Under Section 13 of the Dublin Transport Authority Act 2008, the Authority is required, within nine months of that approval date, to make an Integrated Implementation Plan ("Plan") covering the first six year period of the Transport Strategy. However, because the Government decided to undertake a review of capital spending in 2016, and because the legislation does not permit any amendments to an adopted Plan until a new Transport Strategy is approved by the Minister, it was agreed to postpone the development of the Plan until the Government's review concluded.

Earlier this year the Government published its National Development Plan 2018-2027. This publication has enabled the Integrated Implementation Plan to be prepared.

2.2 Geographical Scope and Required Content for the Implementation Plan

The spatial scope of the Plan provisions generally correspond to the jurisdictions of the seven local authorities of the Greater Dublin Area². However, while the initial legislation governing the Plan was more clearly limited to the delivery of the Transport Strategy for the Greater Dublin Area, subsequent amendments have somewhat diluted this position. 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, will be dealt with on a national basis. The spatial specificity of the Plan beyond the Greater Dublin Area is reduced and relatively insignificant.

Under the Plan, beyond the Greater Dublin Area, projects are only capable of being proceeded with if they have been included in adopted lower-tier land use/transport Plans and have been subjected to associated appropriate levels of SEA and AA.

Projects that have not been included in adopted lower-tier land use/transport Plans and that have not been subject to associated appropriate levels of SEA and AA cannot be proceeded with until they have been included in adopted lower-tier Plans and subjected to associated appropriate levels of SEA and AA.

The Plan provides a context for lower tier planning, including the specification of mitigations measures/targets (see Section 5 of this report).

Section 13 of the Dublin Transport Authority Act 2008 (the "Act") sets out the required contents of an integrated Implementation Plan ("Plan"). A Plan is required to comprise the following:

- an infrastructure investment programme, identifying the key objectives and outputs to be pursued by the Authority over the period of the Plan;
- the actions to be taken by the Authority to ensure the effective integration of public transport infrastructure over the period of the Plan;
- an integrated service plan, identifying the key objectives and outputs to be pursued by the Authority in relation to the procurement of public passenger transport services over the period of the Plan;

² Dublin City Council, Dún Laoghaire Rathdown County Council, Fingal County Council, South Dublin County Council, Kildare County Council, Meath County Council and Wicklow County Council in addition to an area of County Louth to take account of the Dublin to Drogheda rail line.

- the actions to be taken by the Authority in relation to small public service vehicles,
- the actions to be taken by the Authority to ensure the effective integration of public passenger transport services over the period of the Plan; and
- such other matters as the Authority considers appropriate or as may be prescribed by the Minister for Transport, Tourism and Sport (“the Minister”).

2.3 Plan Informants for and Content of the Integrated Implementation Plan

The emergence of increasing road congestion in recent years has underlined the need to provide an enhanced level of public transport provision to provide an alternative to car-based commuting. Congestion is a challenge that must be addressed by the transport system in a context where significant population growth, and associated economic, social, cultural and recreational activity is being planned for.

The significance of the need for action to reduce the use of fossil fuels and diminish the generation of greenhouse gases is recognised and required by legislation.

The National Transport Authority is required to adhere to the National Climate Change Adaptation Framework, which was published by the Minister for Communications, Climate Action and Environment in 2018, and the Department of Transport, Tourism and Sport’s Sectoral Adaptation Plan, published in 2017.

The Transport Strategy for the Greater Dublin Area 2016-2035, which established an overall framework for transport investment over the next two decades and was subject to full SEA and Stage 2 AA, is a key policy shaping the six-year Integrated Infrastructure Plan.

Taking all of the above into account, the Authority has focused on improving public and sustainable transport across the Greater Dublin Area while seeking 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. In addition, transitioning to lower emission vehicles for transport use is also fundamental to reducing transport related carbon emissions.

To date the Authority has focused significant levels of investment in these sustainable modes, including the reopening of the Phoenix Park Tunnel and the delivery of Luas Cross City. It is intended that this will continue under the Implementation Plan.

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.

Most proposals included within the Plan have been already included within plans that have already been subject to AA including the Transportation Strategy for the Greater Dublin Area 2016-2035, the National Planning Framework 2018 and the Greater Dublin Area Cycle Network Plan 2016.

2.4 Relationship with other Relevant Plans and Programmes

The Implementation Plan sits within a hierarchy of plans and programmes.

In order to develop a coherent spatial planning hierarchy, and as a means of addressing imbalances between spatial planning trends and the provision of services, Government published the **National**

Planning Framework (NPF) as part of **Project Ireland 2040** in 2018. 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 places a strong emphasis on the role of the five cities in accommodating population growth and growth in all associated activities within and adjacent to their existing built-up areas, as a means of facilitating sustainable travel. In each city, transport infrastructure and services are seen as key future growth enablers, with focus paid in particular to bus enhancement, MetroLink, expansion of DART and the Cycle Network in Dublin, and much enhanced Citywide public transport networks in the other cities. The NPF was subject to full SEA and Stage 2 AA.

The NPF is given regional expression through land use plans including the **Regional Spatial and Economic Strategies** (RSES), which are being subject to SEA and AA. Each one of the three Regional Assemblies will prepare their own RSES.

Within the Greater Dublin Area, each local authority is required to continue to ensure their **City and County Development Plans**, and their **local plans**, are consistent with the Authority's **Transport Strategy for the Greater Dublin Area 2016-2035**, which establishes an overall framework for transport investment in accordance with legislation over the next two decades. The Transport Strategy has been subject to SEA and AA and SEA and AA requirements apply to City and County Development Plans and Local Area Plans.

The National Transport Authority is required by the Dublin Transport Authority Act 2008 to prepare a six year Integrated Implementation Plan to, inter alia, facilitate the implementation of the Transport Strategy for the Greater Dublin Area. The Transport Strategy is therefore key in shaping the six-year Integrated Infrastructure Plan. The priorities in the Integrated Infrastructure Plan align with the objectives and priorities set out in the Transport Strategy, focused on improving public and sustainable transport across the Greater Dublin Area.

Most proposals included within the Plan have been already included within plans that have already been subject to SEA including the Transportation Strategy for the Greater Dublin Area, the NPF and the Greater Dublin Area Cycle Network Plan 2016. Projects that have not been included in adopted lower-tier land use/transport Plans and that have not been subject to associated appropriate levels of SEA and AA cannot be proceeded with until they have been included in adopted lower-tier Plans and subjected to associated appropriate levels of SEA and AA.

It is anticipated that, during the lifetime of the Integrated Implementation Plan, the transport planning functions of the National Transport Authority, and their engagement with land use planning, will be extended to the other Metropolitan Areas, in line with the NPF. As such, the mechanisms for the closer integration of land use planning, and transport planning and investment, will be rolled out and extended nationally, leading to a more coherent relationship between the location of housing, employment, retail and commercial development, and transport services. Any future Transportation Strategies for these Metropolitan Areas will be required to be subject to SEA and AA as appropriate.

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

Section 3 Screening for Appropriate Assessment

3.1 Introduction to Screening

3.1.1 Background to Screening

This stage of the process identifies any likely significant effects to European Sites from a project or plan, either alone or in combination with other projects or plans. The screening phase was progressed in the following stages. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European Site; and
- Whether the project will have a potentially significant effect on a European Site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

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.

Site-Specific Conservation Objectives (SSCOs) have been designed to define favourable conservation status for a particular habitat or species at that site. According to the European Commission interpretation document 'Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC', paragraph 4.6(3) states:

"The integrity of a site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

Favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing;
- The specific structure and functions which 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.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats,
- The natural range of the species is neither being reduced nor is 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.

The screening stage of the AA takes account of the elements detailed above with regard to the details and characteristics of the project or plan to determine if potential for effects to the integrity of the European Site are likely.

3.1.2 Desktop Studies

The ecological desktop study completed for this AA of the Implementation Plan comprised the following elements:

- Identification of European Sites within 15km with identification of potential pathways links for specific sites (if relevant) greater than 15km from the core area which the Implementation Plan relates;
- Review of the NPWS site synopsis and conservation objectives for European Sites with identification of potential pathways from the core area which the Implementation Plan relates; and
- A series of ecological desk studies were undertaken at various stages from November 2016 to October 2018. This included but is not limited to the collation of information on protected species including Bats, Otters, Bird species (including Annex I species), Annex II habitat types, protected and Red Data Book Flora species, invertebrates and amphibians. The results of these studies are included as part of the AA where they were deemed relevant to the European Sites and their QIs/SCIs.

3.2 Identification of Relevant European Sites

This section of the screening process describes the European Sites which exist within the core ZOI of the site. The Department of the Environment (2009) Guidance on AA recommends a 15km buffer zone to be considered. Consideration of the scope of the Plan including the details provided under Section 2.2³ of this report and a review of all sites within the core ZOI (see Figure 3.1) has allowed a determination to be made that, in the absence of significant hydrological links, the Plan will not impose impacts beyond this ZOI.

European Sites that occur within 15km of the core area to which the Implementation Plan relates or that were identified to have hydrological linkages to this area are listed in Table 3.1 and illustrated in Figure 3.1 below.

In order to determine the potential for effects from the Implementation Plan, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European Sites was reviewed. Background information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- *Ireland's Article 17 Report to the European Commission "Status of EU Protected Habitats and Species in Ireland" (NPWS, 2013);*
- *Site Synopses; and*
- *NATURA 2000 Standard Data Forms.*

The assessment takes consideration of the SSCOs of each of the sites within the ZOI. Since the conservation objectives for the European Sites 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 Implementation Plan against the QIs/SCIs of each site. The conservation objectives for each site were consulted throughout the assessment process.

The site-specific threats and vulnerabilities of each of the sites are detailed in Appendix I.

³ Including the geographical scope of the Plan and the requirements of the Plan that: beyond the Greater Dublin Area, projects are only capable of being proceeded with if they have been included in adopted lower-tier land use/transport Plans and have been subjected to associated appropriate levels of SEA and AA; and projects that have not been included in adopted lower-tier land use/transport Plans and that have not been subject to associated appropriate levels of SEA and AA cannot be proceeded with until they have been included in adopted lower-tier Plans and subjected to associated appropriate levels of SEA and AA.

Table 3.1 European Sites within 15 km of the core area of infrastructure developments proposed within the Implementation Plan⁴

Site Code	Site Name	Distance
Special Areas of Conservation		
000006	Killyconny Bog (Cloghbally) SAC	0
000199	Baldoyle Bay SAC	0
000202	Howth Head SAC	0
000204	Lambay Island SAC	0
000205	Malahide Estuary SAC	0
000206	North Dublin Bay SAC	0
000208	Rogerstown Estuary SAC	0
000210	South Dublin Bay SAC	0
000391	Ballynafagh Bog SAC	0
000396	Pollardstown Fen SAC	0
000397	Red Bog, Kildare SAC	0
000713	Ballyman Glen SAC	0
000714	Bray Head SAC	0
000716	Carriggower Bog SAC	0
000717	Deputy's Pass Nature Reserve SAC	0
000719	Glen Of The Downs SAC	0
000725	Knocksink Wood SAC	0
000729	Buckrone-y-Brittis Dunes And Fen SAC	0
000733	Vale Of Clara (Rathdrum Wood) SAC	0
000781	Slaney River Valley SAC	0
001209	Glenasmole Valley SAC	0
001387	Ballynafagh Lake SAC	0
001398	Rye Water Valley/Carlton SAC	0
001742	Kilpatrick Sandhills SAC	0
001757	Holdenstown Bog SAC	0
001766	Magherabeg Dunes SAC	0
001810	White Lough, Ben Loughs And Lough Doo SAC	0
001957	Boyne Coast And Estuary SAC	0
002120	Lough Bane And Lough Glass SAC	0
002122	Wicklow Mountains SAC	0
002162	River Barrow And River Nore SAC	0
002193	Ireland's Eye SAC	0
002249	The Murrrough Wetlands SAC	0
002299	River Boyne And River Blackwater SAC	0
002331	Mouds Bog SAC	0
002340	Moneybeg And Clare island Bogs SAC	0
002342	Mount Hevey Bog SAC	0
003000	Rockabill to Dalkey Island SAC	0
002274	Wicklow Reef SAC	0.47
000925	The Long Derries, Edenderry SAC	0.57
002256	Ballyprior Grassland SAC	2.79
002121	Lough Lene SAC	2.91
001459	Clogher Head SAC	6.61
002141	Mountmellick SAC	8.77
000770	Blackstairs Mountains SAC	10.73
000685	Lough Ennell SAC	12.06
000679	Garriskil Bog SAC	12.10
000582	Raheenmore Bog SAC	12.74
002341	Ardagullion Bog SAC	13.55
000455	Dundalk Bay SAC	14.64
Site Code	Site Name	Distance
Special Protected Areas		
004006	North Bull Island SPA	0
004015	Rogerstown Estuary SPA	0
004016	Baldoyle Bay SPA	0
004024	South Dublin Bay and River Tolka Estuary SPA	0
004025	Broadmeadow/Swords Estuary SPA	0
004040	Wicklow Mountains SPA	0
004063	Poulaphouca Reservoir SPA	0
004065	Lough Sheelin SPA	0
004069	Lambay Island SPA	0
004080	Boyne Estuary SPA	0

⁴ Separated according to designation, SAC or SPA, and listed according to distance

004113	Howth Head Coast SPA	0
004117	Ireland's Eye SPA	0
004127	Wicklow Head SPA	0
004158	River Nanny Estuary and Shore SPA	0
004172	Dalkey Islands SPA	0
004186	The Murrrough SPA	0
004232	River Boyne and River Blackwater SPA	0
004122	Skerries Islands SPA	0.32
004014	Rockabill SPA	1.69
004061	Lough Kinale and Derragh Lough SPA	3.95
004091	Stabannan-Braganstown SPA	8.71
004043	Lough Derravaragh SPA	9.36
004044	Lough Ennell SPA	12.45
004026	Dundalk Bay SPA	14.38
004102	Garriskil Bog SPA	14.74

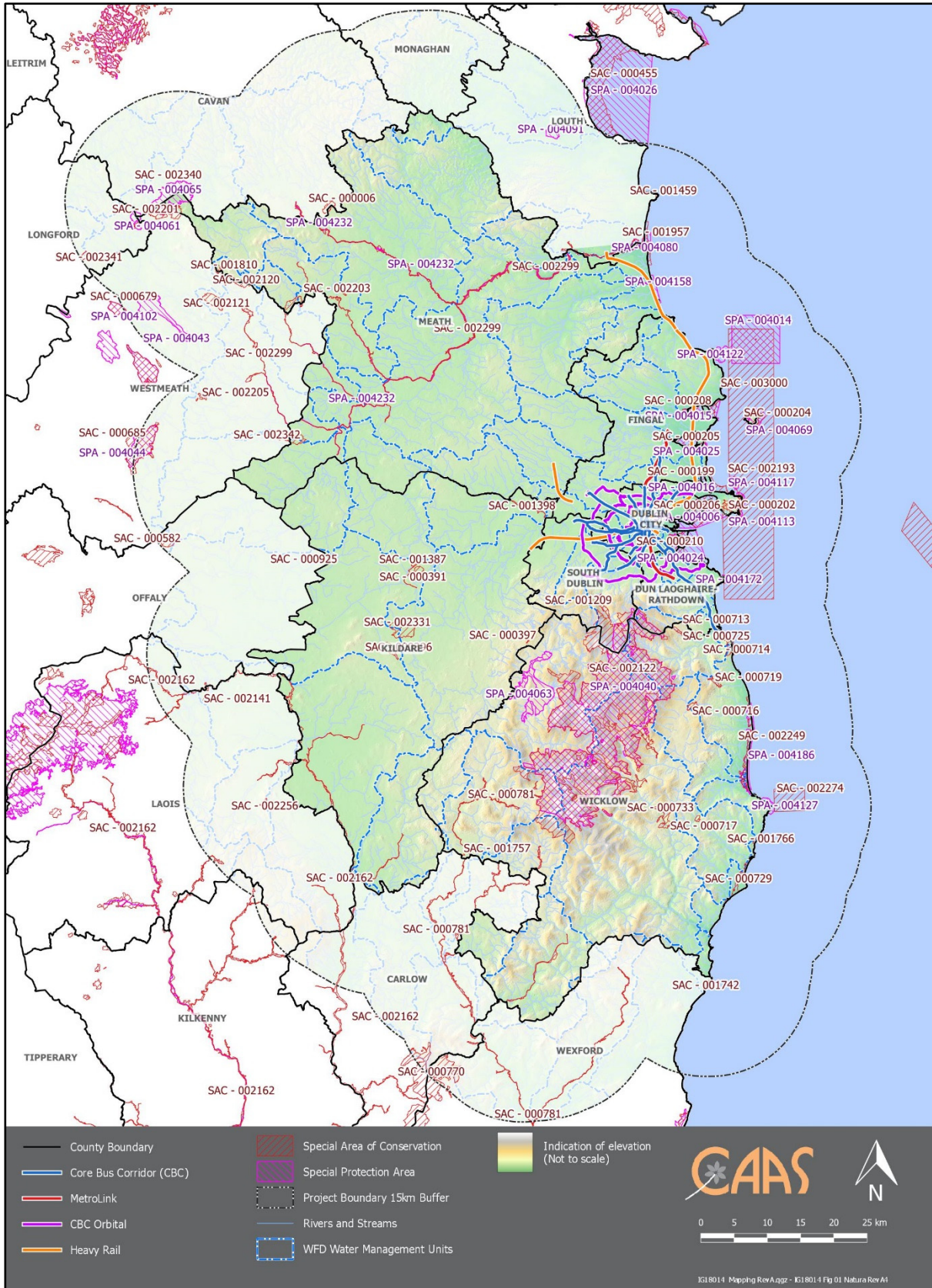


Figure 3.1 European Sites with 15 km of the core area of infrastructure developments proposed within the Implementation Plan⁵

⁵ Source: NPWS (datasets downloaded July 2018)

3.3 Assessment Criteria

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

Under the Habitats Directive, plans that are directly connected with or necessary to the management of a European Site do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to be direct and not a by-product of the plan, even if this might result in positive or beneficial effects for a site(s).

The primary purpose of the Implementation Plan is not the nature conservation management of the sites, but to provide for development and maintenance of transport facilities and services. Therefore, the Implementation Plan 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 Implementation Plan with Potential to Give Rise to Effects

The Implementation Plan provides a framework for the planning and delivery of transport infrastructure and services from 2019 to 2024 as described in Section 2 above. The Implementation Plan focuses primarily on projects within the Greater Dublin Area; however, it provides for works across all of Ireland.

The development and operation of transport infrastructure could potentially give rise to significant effects on European Sites. The provisions include proposals for transport infrastructure that are at various stages in the design and planning process and refer to specific locations within the Implementation Plan area. Other proposals that are provided for but are at preliminary stages and therefore specific locations / routes and other project details have yet to be selected or decided upon. It is possible that some of the transport projects proposed in the Implementation Plan, have potential to result in: direct effects on European Sites in terms of 'land-take'; and/or indirect effects that may result from changes to hydrology or water quality, and a range of other possible effects.

The following are considered to be the key elements (according to different transport modes) of the Implementation Plan that could potentially give rise to significant effects. Most proposals included within the Plan have been already included within plans that have already been subject to AA including the Transportation Strategy for the Greater Dublin Area 2016-2035, Project Ireland 2040 (including the National Planning Framework 2018) and the Greater Dublin Area Cycle Network Plan 2016.

Heavy Rail Infrastructure, including:

- Ongoing operation, upgrade, and enhancement works on existing lines and associated infrastructure;
- Implementation of DART Expansion Programme which includes development of electrified services along certain routes;
- Development of new rail infrastructure including stations (likely locations include Kishogue on the Kildare line and Pelletstown on the Maynooth Line) and control centre; and
- Additional track work.

Light Rail Infrastructure, including:

- Further development of the light rail network (including both Luas and MetroLink) and associated infrastructure.

Bus Infrastructure, including:

- Core Bus Corridors and Improved Interchange Facilities within the Greater Dublin Area;
- Development of new bus stations; and
- Implementation of a programme for the improvement of bus facilities and stopping areas. This would include such works as installation of bus stops and associated infrastructure (shelters, cycle parking facilities etc.).

Cycling and Walking Infrastructure, including:

- Implementation of the Greater Dublin Area Cycle Network Plan. The network is to include primary, secondary as well as greenway routes. Although, the Plan has already been subject to AA that determined that the Plan has 'no likely significant effects on European Sites⁶, the provisions of the Plan are further considered in this report to ensure that the potential cumulative effects of the Plan are addressed;
- Identification, and enhancement, of a strategic pedestrian network in urban areas, including widening and resurfacing of footpaths;
- Pedestrianisation and pedestrian improvement schemes; and
- Development of integrated bus/cycling/walking transport corridors - routes to include two-way segregated cycle tracks, off-road greenways, contra-flow lanes and locations where cyclists will share with general traffic.

Road Network:

- Ongoing operation, upgrade, and enhancement works on existing roads and associated infrastructure, including development of new road infrastructure, such as that related to BusConnects and cycleways.

Park and Ride:

- Development of new park and ride facilities at appropriate locations.

3.3.3 Identification of Potential Effects and Screening of Sites

This section documents the final stage of the screening process. It has used the information collected on the sensitivity of each European Site and describes any potential effects to the integrity of European Sites resulting from the Implementation Plan. This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European Site. Secondly, the individual elements of the Implementation Plan and the potential effect they may cause to the site were considered. The elements of the Implementation Plan with potential to cause effect to the integrity of European Sites are presented in Table 3.2 below.

Sites are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are no significant pathways such as hydrological links between activities of the Implementation Plan, and the site to be screened;
- Where the site is located at such a distance from Implementation Plan that effects are not foreseen; and
- Where it is that known threats or vulnerabilities at a site cannot be linked to potential impacts that may arise from the Implementation Plan.

The assessment has taken into account issues including the scope of the Plan, including the details provided under Section 2.2, and the fact that all projects and plans arising from the Plan will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive.

The following sources were used to inform the preparation of Table 3.2:

- NPWS (2015) Conservation Objectives: Killyconny Bog (Cloghbally) SAC 000006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2016) Conservation Objectives: Howth Head SAC 000202. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2013) Conservation Objectives: Lambay Island SAC 000204. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Malahide Estuary SAC 000205. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Rogerstown Estuary SAC 000208. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: Ballynafagh Bog SAC 000391. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation objectives for Pollardstown Fen SAC [000396]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation objectives for Red Bog, Kildare SAC [000397]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation objectives for Ballyman Glen SAC [000713]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

⁶ National Transport Authority (2013). Greater Dublin Area Cycle Network. Appropriate Assessment Screening Report Natura Impact Report.

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- NPWS (2017) Conservation Objectives: Bray Head SAC 000714. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for Carriggower Bog SAC [000716]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Deputy's Pass Nature Reserve SAC [000717]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Glen of the Downs SAC [000719]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Knocksink Wood SAC [000725]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Buckronev-Brittis Dunes and Fen SAC 000729. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for Vale of Clara (Rathdrum Wood) SAC [000733]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht
- NPWS (2011) Conservation Objectives: Slaney River Valley SAC 000781. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Glenasmole Valley SAC [001209]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Ballynafagh Lake SAC [001387]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Rye Water Valley/Carlton SAC [001398]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Kilpatrick Sandhills SAC 001742. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for Holdenstown Bog SAC [001757]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Magherabeg Dunes SAC 001766. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for White Lough, Ben Loughs and Lough Doo SAC [001810]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2012) Conservation Objectives: Boyne Coast and Estuary SAC 001957. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Bane and Lough Glass SAC [002120]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Ireland's Eye SAC 002193. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for the Murrough Wetlands SAC [002249]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for River Boyne and River Blackwater SAC [002299]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: Mouds Bog SAC 002331. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2016) Conservation Objectives: Moneybeg and Clare island Bogs SAC 002340. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2016) Conservation Objectives: Mount Hevey Bog SAC 002342. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Wicklow Reef SAC 002274. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for the Long Derries, Edenderry SAC [000925]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Ballyprior Grassland SAC [002256]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Lene SAC [002121]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017) Conservation Objectives: Clogher Head SAC 001459. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018) Conservation Objectives for Mountmellick SAC [002141]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Blackstairs Mountains SAC [000770]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives: Lough Ennell SAC 000685. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: Garriskil Bog SAC 000679. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: Raheenmore Bog SAC 000582. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: Ardaghullion Bog SAC 002341. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2011) Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Rogerstown Estuary SPA 004015. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Wicklow Mountains SPA [004040]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Poulaphouca Reservoir SPA [004063]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Sheelin SPA [004065]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lambay Island SPA [004069]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht
- NPWS (2013) Conservation Objectives: Boyne Estuary SPA 004080. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Howth Head Coast SPA [004113]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht
- NPWS (2018) Conservation Objectives for Ireland's Eye SPA [004117]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht
- NPWS (2018) Conservation objectives for Wicklow Head SPA [004127]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2012) Conservation Objectives: River Nanny Estuary and Shore SPA 004158. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Dalkey Islands SPA [004172]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for the Murrough SPA [004186]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for River Boyne and River Blackwater SPA [004232]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Skerries Islands SPA [004122]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht
- NPWS (2013) Conservation Objectives: Rockabill SPA 004014. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Kinale and Derragh Lough SPA [004061]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Stabannan-Braganstown SPA [004091]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Derravarragh SPA [004043]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Lough Ennell SPA [004044]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2011) Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2018) Conservation Objectives for Garriskil Bog SPA [004102]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

Table 3.2 Screening of European Sites within 15 km or with significant hydrological links

European Site Name	Distance	Identification of potential significant effects on the qualifying interests or special conservation interests of the site	Pathways for Significant Effects	Potential for In-Combination Effects
Special Areas of Conservation				
Killyconny Bog (Cloghally) SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Baldoyle Bay SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Howth Head SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Lambay Island SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Malahide Estuary SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
North Dublin Bay SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Rogerstown Estuary SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
South Dublin Bay SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Ballynafagh Bog SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Pollardstown Fen SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Red Bog, Kildare SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Ballyman Glen SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Bray Head SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Carriggower Bog SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Deputy's Pass Nature Reserve SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Glen of The Downs SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Knocksink Wood SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Buckronev-Brittas Dunes and Fen SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Vale of Clara (Rathdrum Wood) SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Slaney River Valley SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Glenasmole Valley SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Ballynafagh Lake SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Rye Water Valley/Carlton SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Kilpatrick Sandhills SAC	0	This site is designated for terrestrial coastal habitat and is located on the southern boundary of the Greater Dublin Area. These habitats are sensitive to direct land use management and there are no provisions within the Implementation Plan that identify sources for effects to this site.	No	No
Holdenstown Bog SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Magherabeg Dunes SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
White Lough, Ben Loughs and Lough Doo SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes

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European Site Name	Distance	Identification of potential significant effects on the qualifying interests or special conservation interests of the site	Pathways for Significant Effects	Potential for In-Combination Effects
Boyne Coast and Estuary SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Lough Bane and Lough Glass SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Wicklow Mountains SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
River Barrow and River Nore SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Ireland's Eye SAC	0	Ireland's eye is designated for terrestrial habitats are is an Island off the coast. These habitats are sensitive to direct land use management. There are no sources or pathways for effects to the ecological processes on this island that are contained within the Implementation Plan.	No	No
The Murrrough Wetlands SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
River Boyne And River Blackwater SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Mouds Bog SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Moneybeg And Clare island Bogs SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Mount Hevey Bog SAC	0	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Rockabill to Dalkey Island SAC	0	The Implementation Plan provides for investments into 'Heavy Rail Infrastructure'. The associated works have the potential to increase vibration and noise pollution within the Irish Sea. This is a known threat to the Harbour Porpoise, which is a qualifying interest of the SAC.	Yes	Yes
Wicklow Reef SAC	0.47	This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
The Long Derries, Edenderry SAC	0.57	This site is designated for orchid rich grassland which are reliant on-site specific management actions. There are no sources for effects to this site given the distance and the ecological resource requirements of the qualifying interests.	No	No
Ballyprior Grassland SAC	2.79	This site is designated for Semi-natural dry grasslands and scrubland facies on calcareous substrates which are reliant on-site specific management actions. There are no sources for effects to this site given the distance and the ecological resource requirements of the qualifying interests.	No	No
Lough Lene SAC	2.91	Hydrological link to the site is present and there are pollutant sensitive qualifying interests. This site has pathways for potential adverse effects to the qualifying interests. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Clogher Head SAC	6.61	This site is designated for Vegetated sea cliffs of the Atlantic and Baltic coasts and European dry heaths which are reliant on-site specific management actions. There are no sources for effects to this site given the distance and the ecological resource requirements of the qualifying interests.	No	No
Mountmellick SAC	8.77	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Blackstairs Mountains SAC	10.73	This site is designated for Northern Atlantic wet heaths with Erica tetralix and European dry heaths which are reliant on-site specific management actions. There are no sources for effects to this site given the distance and the ecological resource requirements of the qualifying interests.	No	No
Lough Ennell SAC	12.06	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Garriskil Bog SAC	12.10	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Raheenmore Bog SAC	12.74	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Ardagullion Bog SAC	13.54	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Dundalk Bay SAC	14.64	Considering location of site and the qualifying interests for which it is selected no sources for potential impacts are identified.	No	No
Special Protected Areas				
North Bull Island SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Rogerstown Estuary SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Baldoyle Bay SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
South Dublin Bay and River Tolka Estuary SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes

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European Site Name	Distance	Identification of potential significant effects on the qualifying interests or special conservation interests of the site	Pathways for Significant Effects	Potential for In-Combination Effects
Malahide Estuary SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Wicklow Mountains SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Poulaphouca Reservoir SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Lough Sheelin SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Lambay Island SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Boyne Estuary SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Howth Head Coast SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Ireland's Eye SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Wicklow Head SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
River Nanny Estuary and Shore SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Dalkey Islands SPA	0	Dalkey island is off the coast of Dublin south and is designated for the protection of three bird species. There are no provisions within the Implementation Plan that will interact with land use or land management at this site. The island is off the Dalkey town coast which is an urban town. There are no sources for effect to the conservation objectives of this site, and no direct pathways for effects.	No	No
The Murrough SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
River Boyne and River Blackwater SPA	0	This site has pathways for direct effects to the specific conservation interests through disturbance. Therefore, following the precautionary principal further assessment is required.	Yes	Yes
Skerries Islands SPA	0.32	Skerries Island is off the coast of south County Dublin and is designated for the protection of six bird species. There are no sources for effect to the conservation objectives of this site, and no direct pathways for effects.	No	No
Rockabill SPA	1.69	Rockabill is designated for four bird species, these species are sensitive to direct disturbance and land use management effects. There are no sources for effects the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No
Lough Kinale and Derragh Lough SPA	3.95	Lough Kinale and Derragh Lough is designated for two bird species and wetland and waterbirds [A999]; these species are sensitive to direct disturbance and land use management effects. The site is upstream of the Greater Dublin Area. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No
Stabannan-Braganstown SPA	8.71	Stabannan-Braganstown is designated for one bird species; this species is sensitive to direct disturbance and land use management effects. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km (Scottish Natural Heritage, 2007, A review of Disturbance Distances in Selected Bird Species).	No	No
Lough Derravaragh SPA	9.36	Lough Derravaragh is designated for four bird species and wetland & waterbirds [A999]; these species are sensitive to direct disturbance and land use management effects. The site is upstream of the Greater Dublin Area. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No
Lough Ennell SPA	12.45	Lough Ennell is designated for three bird species and wetland & waterbirds [A999]; these species are sensitive to direct disturbance and land use management effects. The site is upstream of the Greater Dublin Area. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No
Dundalk Bay SPA	14.38	Dundalk Bay is designated for 23 bird species and wetland & waterbirds [A999]; these species are sensitive to direct disturbance and land use management effects. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No
Garriskil Bog SPA	14.74	Garriskil Bog is designated for one bird species; this species is sensitive to direct disturbance and land use management effects. There are no sources for effects in the policies and objectives of the Implementation Plan that will affect the ecological integrity of this site given the distance. Disturbance effects due to noise are known to be negligible at distances beyond 1km.	No	No

3.4 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 combinations with the plan or project, have the potential to adversely impact upon European Sites. Appendix II outlines plans or projects that may interact with the Implementation Plan to cause in-combination effects to European Sites. The plans, programmes etc. are listed according to a spatial hierarchy of National, Regional/Local Projects and Plans, as follows:

- Ireland 2040 - Our Plan, including the National Planning Framework (replacing the National Spatial Strategy 2002-2020) and the National Development Plan 2018-2027;
- Planning, Land Use and Transport Outlook 2040 [in preparation];
- Planning and Development Act 2000 (as amended);
- European Communities (Environmental Assessment of Certain Plans and Programmes Regulations 2004 (S.I. 435 of 2004), as amended by S.I. 200 of 2011;
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011, as amended);
- Waste Management Act 1996, as amended;
- European Communities Environmental Objectives (FPM) Regulations 2009 (S.I. 296 of 2009);
- European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. 9 of 2010), as amended (S.I. No. 366 of 2016);
- European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2014 (S.I. No. 31 of 2014);
- Bathing Water Quality Regulations 2008 (S.I. 79 of 2008);
- Bathing Water Quality (Amendment) Regulations 2011 (S.I. 351 of 2011);
- Climate Action and Low Carbon Development Act 2015;
- The Sustainable Development Goals National Implementation Plan (2018 – 2020);
- Infrastructure and Capital Investment Plan (2016-2021);
- Ireland’s National Renewable Energy Action Plan 2010 (Irish Government submission to the European Commission);
- Strategy for Renewable Energy (2012-2020);
- National Climate Mitigation Plan 2017;
- National Policy Position on Climate Action and Low Carbon Development (2014);
- National Clean Air Strategy [in preparation];
- Eirgrid’s Grid25 Strategy;
- Strategy for the Future Development of National and Regional Greenways (2018);
- National Water Resources Plan [in preparation];
- National Strategic Plan for Aquaculture Development (2014-2020);
- Construction 2020, A Strategy for a Renewed Construction Sector Sustainable Development: A Strategy for Ireland (1997);
- National Landscape Strategy for Ireland 2015-2025 and National Landscape Character Assessment (pending preparation);
- National Hazardous Waste Management Plan (EPA) 2014-2020;
- National Ports Policy 2013;
- National Aviation Policy 2015;
- Ministerial Guidelines such as Sustainable Rural Housing Guidelines and Flood Risk Management Guidelines;
- HSE Healthy Ireland Framework for Improved Health and Wellbeing 2013-2025;
- Marine Spatial Plan for Ireland (in/pending preparation);
- Tourism Action Plan 2016-2018;
- Tourism 2020: Tourism Strategy for Northern Ireland to 2020;
- Our Sustainable Future: A framework for Sustainable Development for Ireland 2012;
- Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020 (2009);
- Strategic Framework for Integrated Land Use and Transport (SFILT) – Department of Transport, Tourism and Sport;
- Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework 2007 – 2020 (2007);

- National Adaptation Framework (NAF) 2018 and forthcoming regional, local and sectoral (including transport sector adaptation plans);
- Governments White Paper 'Ireland's Transition to a Low Carbon Energy Future' (2015 – 2030);
- National Renewable Energy Action Plan (2010);
- National Energy Efficiency Action Plan for Ireland (2009 – 2020);
- Wildlife Act of 1976;
- Wildlife (Amendment) Act, 2000;
- Actions for Biodiversity (2017-2021) Ireland's National Biodiversity Plan;
- National Broadband Plan (2012);
- European Communities (Water Policy) Regulations of 2003 (SI 722 of 2003);
- European Communities (Water Policy) Regulations of 2003 (SI 350 of 2014);
- European Communities Environmental Objectives (Surface waters) Regulations of 2009 (SI 272 of 2009);
- European Communities Environmental Objectives (Groundwater) Regulations of 2010 (SI 9 of 2010);
- Water Pollution Acts 1977 to 1990;
- Water Services Act 2007;
- Water Services (Amendment) Act 2012;
- Water Services Act (No. 2) 2013;
- Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan (2014-2016);
- Raised Bog SAC Management Plan and Review of Raised Bog Natural Heritage Areas;
- Grid25 Strategy and associated Implementation Programme;
- Food Harvest 2020;
- Agri-vision 2015 Action Plan;
- Rural Environmental Protection Scheme (REPS);
- Agri-Environmental Options Scheme (AEOS);
- Green, Low-Carbon, Agri-environment Scheme (GLAS);
- National Landscape Strategy 2015;
- National Rural Development Programme;
- National Forestry Programme (2014-2020);
- River Basin Management Plans;
- National Peatlands Strategy (2015-2025);
- Flood Risk Management Plans arising from National Catchment Flood Risk Assessment and Management Programme;
- Draft National Bioenergy Plan;
- Draft Renewable Electricity Policy and Development Framework (DCCAE);
- National Alternative Fuels Infrastructure for the Transport Sector (DTTAS);
- Food Wise 2025 (DAFM);
- National Cycle Network Scoping Study 2010;
- Strategic Planning Policy Statement (SPPS) NI;
- National Policy Framework for Alternative Fuels Infrastructure for Transport in Ireland 2017 to 2030;
- Developing Resilience to Climate Change in the Irish Transport Sector (Climate Adaptation Plan for the Transport Sector 2017);
- Regional Economic and Spatial Strategies, replacing Regional Planning Guidelines [in preparation];
- Greater Dublin Area (GDA) Transport Strategy (2016-2035);
- Transport Strategy for the Cork Metropolitan Area 2040 [in preparation];
- Greater Dublin Area Cycle Network Plan;
- Dublin to Galway Greenway Plan;
- Regional Development Strategy 2035 (Northern Ireland);
- Water Quality Management Plans;
- Port Masterplans (such as Dublin Port Masterplan 2012-2040 and 2017 Review);
- NPWS Conservation Plans and/or conservation objectives for SACs and SPAs;
- Groundwater Protection Schemes;
- Local Community and Economic Plans;

- Development Plans, Local Area Plans, Planning Schemes;
- Green Infrastructure Plans/Strategies;
- Biodiversity Action Plans;
- Heritage Plans;
- County Landscape Character Assessments;
- Freshwater Pearl Mussel Sub-Basin Management Plans;
- Local Catchment Flood Risk Management Plans;
- Shellfish Pollution Reduction Programmes;
- Regional Waste Management Plans;
- Noise Action Plans; and
- Fáilte Ireland plans, strategies etc.

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

3.5 Conclusions

The likely impacts that could arise from the Implementation Plan have been examined in the context of a number of factors that could potentially affect the integrity of European Sites. On the basis of the findings of this Screening for AA, it is concluded that the Implementation Plan:

- Is not directly connected with or necessary to the management of a European Site; and
- May have significant effects on European Sites.

Therefore, applying the precautionary principle and in accordance with Article 6(3) of the Habitats Directive, Stage 2 AA is required. That stage is set out in Section 4 of this report.

Section 4 Stage 2 Appropriate Assessment

4.1 Introduction

The main objective of the Stage 2 AA is to determine whether the proposed Integrated Implementation Plan of the Integrated Implementation Plan would result in significant adverse effects to the integrity of any European Site with respect to the site's structure, function, and/or conservation objectives.

The Stage 1 Screening presented above has identified 54 European Sites with potential to be affected by the Implementation Plan (see Table 4.1). Therefore, taking a precautionary approach, Stage 2 AA is required. The potential adverse effects considered at this stage will either be effects occurring as a result of the Implementation Plan alone or in-combination with other plans, programmes, and/or projects.

Appendix I provides background information on all of the 54 European Sites with potential to be affected – alone and/or in combination (for other plans, programmes, etc. please refer to Appendix II) – by the Plan. The background information includes known threats for each of the qualifying features of the European Sites as well as site specific threats as identified by the NPWS. Where the Plan provides details of projects that have the potential to affect particular European Sites then detailed discussion is provided under Section 4.2 below. Mitigation outlined in Section 5 will contribute towards the protection of European Sites.

Table 4.1 European Sites⁷ Potentially Affected by the Integrated Implementation Plan

Freshwater (rivers and lakes)		Other (grasslands, woodlands uplands etc.)		Wetlands (Bogs, fens etc.)		Coastal and marine		SPAs for Birds	
Site Code	Site Name	Site Code	Site Name	Site Code	Site Name	Site Code	Site Name	Site Code	Site Name
000781	Slaney River Valley SAC	000714	Bray Head SAC	000006	Killyconny Bog (Cloghbally) SAC	000199	Baldoyle Bay SAC	004006	North Bull Island SPA
001810	White Lough, Ben Loughs and Lough Doo SAC	000717	Deputy's Pass Nature Reserve SAC	000391	Ballynafagh Bog SAC	000202	Howth Head SAC	004015	Rogerstown Estuary SPA
002120	Lough Bane and Lough Glass SAC	000719	Glen of The Downs SAC	000396	Pollardstown Fen SAC	000205	Malahide Estuary SAC	004016	Baldoyle Bay SPA
002121	Lough Lene SAC	000733	Vale of Clara (Rathdrum Wood) SAC	000397	Red Bog, Kildare SAC	000206	North Dublin Bay SAC	004024	South Dublin Bay and River Tolka Estuary SPA
002162	River Barrow and River Nore SAC	000725	Knocksink Wood SAC	000713	Ballyman Glen SAC	000208	Rogerstown Estuary SAC	004025	Broadmeadow/Swords Estuary SPA
002299	River Boyne And River Blackwater SAC	001209	Glenasmole Valley SAC	002340	Moneybeg And Clare island Bogs SAC	000210	South Dublin Bay SAC	004040	Wicklow Mountains SPA
		002122	Wicklow Mountains SAC	001387	Ballynafagh Lake SAC	000729	Buckronev-Brittis Dunes and Fen SAC	004063	Poulaphouca Reservoir SPA
				001398	Rye Water Valley/Cartron SAC	001766	Magherabeg Dunes SAC	004065	Lough Sheelin SPA
				001757	Holdenstown Bog SAC	001957	Boyne Coast and Estuary SAC	004069	Lambay Island SPA
				002249	The Murrrough Wetlands SAC	003000	Rockabill to Dalkey Island SAC	004080	Boyne Estuary SPA
				002331	Mouds Bog SAC	000204	Lambay Island SAC	004113	Howth Head Coast SPA
				002342	Mount Hevey Bog SAC	002274	Wicklow Reef SAC	004117	Ireland's Eye SPA
				000716	Carriggower Bog SAC			004127	Wicklow Head SPA
								004158	River Nanny Estuary and Shore
								004186	The Murrrough SPA
								004232	River Boyne and River Blackwater

⁷ Categories by principal habitat feature of interest present

4.2 Characterisation of European Sites Potentially Affected

It is necessary to characterise each of the sites identified under Table 4.1 and the sensitivities of their QIs and SCIs.

This following information has been used to identify QIs and SCIs:

- *NPWS Site Synopsis;*
- *Natura 2000 Standard Data Form; and*
- *Conservation objectives and supporting documents.*

Table 4.2 characterises each of the QIs of and main threats to the SAC sites brought forward from Stage 1 screening. Table 4.3 lists the SCIs of each of the SPA sites brought forward. Site characteristics were derived from the NPWS website⁸; site specific threats are detailed in Appendix I.

Table 4.2 Characterisation of the Qualifying Interests of SACs Potentially Affected

QI Annex I Habitat	No. of Relevant Sites	Main threats ⁹
Alkaline fens	6	Peat extraction, wetland reclamation, and infilling are the most notable threats to this habitat type.
Alpine and subalpine heath	1	High levels of sheep grazing, hill walking and abandonment of traditional agricultural practices (which has led to scrub encroachment) are the most notable threats to this habitat
Atlantic salt meadows	7	This habitat is affected by ecologically unsuitable grazing levels impacting on the condition of the habitat.
Blanket bog (active)*	1	Main threats include overgrazing, trampling, burning, drainage, afforestation, peat extraction, windfarm and other infrastructural development.
Calcareous rocky slopes	1	Recreational activities such as rock climbing, unsuitable grazing levels and invasive non-native species are the most notable threats to this habitat type.
Cladium fen*	2	Peat extraction, wetland reclamation, and infilling are the most notable threats to this habitat type.
Decalcified dune heath*	2	Pressures from grazing and agricultural intensification.
Degraded raised bogs	5	Peat extraction (ongoing) and drainage have resulted in shrinking and slumping of the bog structure.
Drift lines	4	Recreational pressures, beach cleaning in particular, and coastal defenses which may affect the sediment dynamics of this habitat are the most notable threats to this habitat type.
Dry heaths	4	Afforestation and agricultural improvement are the most notable threats to this habitat. The quality of the habitat has been affected by overgrazing, trampling, burning, invasive non-native species, drainage and erosion.
Dune slack	2	This habitat suffers from ongoing habitat loss from interference in the local hydrology, recreation and agriculture.
Dunes with creeping willow	1	This habitat is affected by grazing, forestry, and agricultural intensification.
Dystrophic lakes	1	Pressures causing peatland damage results in hydrological changes in dystrophic lakes and ponds, as well as increased sedimentation, colour, turbidity, organic material and ammonia. Fertilization of forests may also contribute to enrichment of this habitat.
Embryonic shifting dunes	4	Recreational pressures and coastal defenses which may affect the sediment dynamics and wave dynamics are the most notable threats to this habitat type.
Estuaries	4	Pollution and fishing/aquaculture related activities affect habitat quality, particularly in some highly sensitive areas.
Fixed dunes (grey dunes)*	6	This habitat is affected by ecologically unsuitable grazing levels impacting on the condition of the habitat, along with recreational pressures.
Floating river vegetation	2	Nutrient and organic losses from agriculture, municipal and industrial discharges are the most significant pressures to river habitats.
Hard water lakes	3	The hard water lake habitat is under significant pressure from eutrophication, the primary sources of nutrients and organic material being agriculture, municipal, and industrial wastewaters. Movement of pollutants, especially phosphorus, through groundwater is of significant concern.

⁸ NPWS (2018), last accessed 23rd July 18; <https://www.npws.ie/protected-sites>

⁹Threats/vulnerabilities of habitats according to NPWS published document 'The Status of EU Protected Habitats and Species in Ireland 2013'.

Hydrophilous tall herb	1	Grazing (sheep and cattle), the spread of invasive species, intensified agriculture and land reclamation are the most notable threats to this habitat type.
Marram dunes (white dunes)	6	Recreational pressures and coastal defenses are the most notable threats to this habitat type.
Mediterranean salt meadows	8	This habitat is affected by ecologically unsuitable grazing levels impacting on the condition of the habitat.
Molinia meadows	1	Succession to scrub, abandonment of pastoral systems, and abandonment of mowing have led to a decline in this habitat type.
Old oak woodlands	6	Invasive non-native species such as Rhododendron and Beech and overgrazing by deer are regarded as the main pressures to this habitat type.
Orchid-rich calcareous grassland*	1	Agricultural intensification and abandonment leading to scrub encroachment have led to habitat loss and fragmentation.
Perennial vegetation of stony banks	2	Recreational pressures and coastal defenses which may affect the sediment dynamics of this habitat are the most notable threats to this habitat type.
Petrifying springs*	7	Drainage, land reclamation, unsuitable grazing levels, pollution and water abstraction, along with isolated incidences of road drainage and outdoor leisure pursuits are the most notable pressures on this habitat type.
Raised bog (active)*	5	Peat extraction (ongoing), and drainage have resulted in shrinking and slumping of the bog structure.
Residual alluvial forests*	4	This habitat has suffered considerable historic losses and is highly fragmented. Non-native and invasive species especially Sycamore and beech and problematic native species such as bramble and common nettle are regarded as the main pressures impacting on this habitat.
Reefs	3	Discharge to the watercourse limiting the viability of the reef species.
Rhynchosporion depressions	4	Sheep grazing is one of the main land uses occurring in this habitat, resulting in trampling and concomitant in standing water surfaces. This habitat is also affected by peat cutting and drainage.
Salicornia mud	6	The ongoing spread of common cordgrass (<i>Spartina anglica</i>) and invasion are the most notable threats to this habitat type.
Sea cliffs	3	Erosion caused by sea defenses and pathways, and invasive species are the most notable threats to this habitat type.
Siliceous rocky slopes	1	Recreational activities such as rock climbing and unsuitable grazing levels are the most notable threats to this habitat type.
Siliceous scree	1	Recreational activities such as rock climbing, unsuitable grazing levels and invasive non-native species are the most notable threats to this habitat type.
Soft water lakes with base rich influences	1	Habitat affected by eutrophication and other activities linked to water pollution and hydrological change. Agriculture and domestic wastewater are the most significant sources of nutrients causing enrichment of this habitat, particularly in peaty soils. Peat-cutting and forestry on peatland are also notable pressures on this habitat.
Spartinion	1	Habitat is no longer considered to be of conservation interest as Spartina is an invasive non-native species.
Species-rich nardus upland grassland*	1	Forestry planting and agricultural improvements are ongoing and causing habitat loss, along with succession to heath and scrub.
Tidal mudflats	8	Pollution and fishing/aquaculture and diverse use of the foreshore are likely to affect habitat quality, particularly eelgrass beds.
Transition mires	3	Peat extraction, wetland reclamation, and infilling are the most notable threats to this habitat type
Wet heath	1	Afforestation and agricultural improvement are the most notable threats to this habitat. The quality of the habitat has been affected by overgrazing, trampling, burning, invasive non-native species, drainage and erosion.
QI Annex II Species	No. of Relevant Sites	Main threats
Atlantic Salmon	3	There are numerous threats to the freshwater habitats of this species.
Brook Lamprey	2	No significant pressures affecting this species
Common Seal	1	Vulnerable to disturbance from human activities, accidental entanglement in fishing gear, illegal killing, competition for prey, pollution as well as other habitat degradation effects.
Desmoulin's whorl snail	4	The drying out of wetlands is an ongoing threat to this species.
Freshwater Pearl Mussel	2	Urban wastewater, development activities, farming, and forestry have led to increased sedimentation and nutrient run-off, a significant threat to the species. Direct impacts from channelization, bridge construction and recreational fishery structures.
Geyer's whorl snail	1	Species requires transitional wetland habitat. Sites for this species are small and easily damaged.
Grey Seal	2	Distance to human activities, accidental entanglement in fishing gear competition for prey resources, illegal killing, pollution and habitat degradation.

Harbour Seal	1	Species feed on small fish and squid. The main threats to this species includes by-catch in fishing gear, pollution of the marine environment and habitat degradation.
Harbour Porpoise	2	The main threats to this species includes by-catch in fishing gear, pollution of the marine environment and habitat degradation.
Irish Freshwater Pearl Mussel	1	Sedimentation of the Nore pearl mussel's habitat has been the main cause of its decline and the habitat quality continues to be in bad condition.
Killarney Fern	1	Threatened by habitat loss, deliberate collection, encroachment of invasive or vigorous species, or indirectly by water pollution, removal of woodland or alteration of watercourses.
Marsh Fritillary	1	Declines in habitat quality lead to species decline.
Narrow-mouthed whorl snail	2	Declines in habitat quality from drainage and grazing.
Otter	4	Otter are vulnerable to disturbance resulting from increased human activity.
Petalwort	1	There are no significant impacts affecting this species.
River Lamprey	3	No significant pressures affecting this species
Salmon	3	Marine survival rates are of concern for the populations. Disease, parasites and barriers to movement.
Sea Lamprey	2	Barriers to upstream migration (e.g. weirs), which limit access to spawning beds and juvenile habitat are main threats to this species.
Twaite Shad	2	Habitat quality, particularly at spawning sites is the most notable threat to this species.
White-Clawed Crayfish	4	The threat of disease introduction is the most notable impact on this species.

Table 4.3 Characterisation of the Special Conservation Interests of SPAs Potentially Affected

Special Conservation Interests	Conservation Status	No. of Relevant Sites	Vulnerability to significant effects
Arctic Tern	Annex I; Amber listed	1	All bird species listed as Special Conservation Interests are sensitive to varying degree by disturbance and displacement. Those wintering bird species are vulnerable to disturbance and displacement from October to March whereas those sites designated for breeding birds are vulnerable from March to August. Development of infrastructure in proximity to SPA sites would potentially cause disturbance to bird species during both the construction and operation phase. Similarly, the enhancement of transport infrastructure could have the effect of increasing visitor numbers at sensitive sites.
Common Tern	Annex I; Amber listed	1	
Kingfisher	Annex I; Amber listed	1	
Merlin	Annex I; Amber listed	1	
Peregrine	Annex I; Green listed	1	
Red-throated diver	Annex I; Amber listed	1	
Roseate Tern	Annex I; Red listed	1	
Little Tern	Annex I; Amber listed	2	
Bar-tailed Godwit	Annex I; Amber listed	4	
Golden Plover	Annex I; Red listed	5	
Greenland White-fronted Goose	Annex I; Red listed	1	
Black-headed Gull	Red listed	3	
Black-tailed Godwit	Red listed	4	
Cormorant	Amber listed	2	
Curlew	Red listed	1	
Dunlin	Red listed	4	
Fulmar	Green listed	1	
Goldeneye	Red listed	2	
Great Crested Grebe	Amber listed	2	
Grey Plover	Amber listed	6	
Greylag Goose	Amber listed	4	
Guillemot	Amber listed	2	
Herring Gull	Red listed	4	
Kittiwake	Amber listed	2	
Knot	Amber listed	6	
Lapwing	Red listed	1	
Lesser Black-backed Gull	Amber listed	2	
Light-bellied Brent Goose	Amber listed	6	
Oystercatcher	Amber listed	6	
Pintail	Red listed	2	
Pochard	Red listed	1	
Puffin	Amber listed	1	
Razorbill	Amber listed	2	
Red-breasted Merganser	Green listed	1	
Redshank	Red listed	5	
Ringed Plover	Green listed	4	
Sanderling	Green listed	4	
Shag	Amber listed	1	
Shelduck	Amber listed	5	
Shoveler	Red listed	2	
Teal	Amber listed	2	
Tufted Duck	Red listed	1	
Turnstone	Green listed	2	
Wigeon	Green listed	1	
Wetlands & Waterbirds		9	Vulnerable to habitat loss from activities such as drainage, infilling and development.

4.3 Identifying and Characterising Potential Significant Effects

The following parameters are described when characterising impacts (following CIEEM (2016; 2018), EPA (2002) and NRA (2009)):

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

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.

The Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for ecological impact assessment (2016; 2018) define: an ecologically significant impact as 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; and the integrity of a site as 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 objectives for cSACs have been provided as follows:

- *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.*

One generic Conservation Objective has been provided for SPAs as follows:

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

4.3.1 Identification of Potential Effects

Potential impacts from the Implementation Plan which have, alone and/or in combination, been identified to result in adverse impacts upon the QIs, SCIs, or integrity of European Sites. The assessment of potential effects on European Sites is conducted utilising a standard Source-Receptor-Pathway model; where, all three elements of this mechanism must be in place to establish an effect arising.

As outlined in the European Commission Environment DG 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*", impacts that could potentially occur through the Implementation Plan can be categorised under a number of headings:

- Loss / reduction of habitat area (e.g. due to the development of new projects);
- Disturbance to Key Species (e.g. increased public access to protected sites, or during the construction phase of infrastructure projects);
- Habitat or species fragmentation;
- Reduction in species density; and
- Changes in key indicators of conservation value such as decrease in water quality / quantity (e.g. through inadequate wastewater treatment, run-off of pollutants during construction and operation of developments, agricultural runoff).

The Implementation Plan is a high-level plan that provides a framework for the development of transport infrastructure. The Plan's provisions include proposals for transport infrastructure and services that are at various stages in the design and planning process and refer to specific locations. Other proposals that are provided for but are at preliminary stages and therefore specific locations / routes and other project details have yet to be selected or decided upon.

All qualifying features relevant to European Sites that have been screened in for AA are listed in Table 4.2 (QIs of SACs), and Table 4.3 (SCIs of SPAs). The number of relevant sites selected for each individual habitat or species is also presented within the tables. Appendix I gives detailed site-specific information for each of the European Sites. QIs and SCIs have been assessed with regard to their vulnerability to the provisions of the Implementation Plan.

The potential for in-combination effects to occur due to interaction with other plans, programmes, etc. is presented in Appendix II. The degree to which effects can be determined is limited as the Implementation Plan will be devised through lower tier environmental assessments and decision-making. Details of the projects that will emanate from the Implementation Plan will allow for a more detailed consideration of environmental effects – including in-combination/cumulative effects – by project level assessments i.e. EIA and AA.

4.3.1.1 Loss / Reduction of Habitat Area

Direct habitat loss is caused where there is removal of a habitat feature or habitat type. Habitat loss can also occur through the reduction of habitat quality and a loss of important habitat functions. It can arise from the introduction of invasive species, toxic contamination, or physical alteration.

Elements of the Implementation Plan could result in the loss or reduction of habitat area, through the development of rail and bus services, as well as national and regional roads. Direct loss or reduction of habitat area will be confined to works which take place within or in close proximity to a European

Site(s). Those sites which overlap with location specific provisions of the Implementation Plan include the following:

Site Code	Site Name	Relationship to plan provisions
000205	Malahide Estuary SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.
000208	Rogerstown Estuary SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.
001398	Rye Water Valley/Carton SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme.
004015	Rogerstown Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.
004025	Broadmeadow/Swords Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.
004158	River Nanny Estuary and Shore SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme.
000714	Bray Head SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme. The Plan identifies that works may be undertaken on the Bray to Greystones section of the network to provide enhanced service capacity along this section. The Plan identifies that the exact works to be undertaken will be identified and assessed during the Plan period. Implementation of the Plan, including the identification of any works and future updates (if any), must be in compliance with environmental requirements, as relevant, including those relating to the EU Habitats Directive.

The significance of potential habitat loss at each of these sites will be assessed by lower level AA to be undertaken on the relevant scheme. Any loss of an Annex I habitat would be likely to constitute a significant effect. Considering that the schemes mostly relate to improvement and enhancement of existing infrastructure using well-established techniques that ensure achievable¹⁰ mitigation, significant habitat loss is unlikely, and in any case, will be assessed in detail at the project level.

Similarly, European Sites may be vulnerable to habitat loss from other projects provided for by the Implementation Plan. The potential for habitat loss in relation to these projects will depend on the final location and detailed design chosen for relevant projects. AA at the project level will further examine potential effects.

Cumulative effects of the DART Expansion and the GDA Cycle Network Plan are possible on Rogerstown Estuary SAC/SPA, Malahide Estuary SAC, and Broadmeadow/Swords Estuary SPA, if unmitigated. These potential effects have previously been identified as in-combination effects during the AA undertaken on both lower tier plans and relevant, achievable mitigation has been included in both Plans to address potential effects. Measures are also included in the Implementation Plan (Section 5) addressing these effects.

For SACs, the SSCOs for individual habitats typically set a target for the attribute 'habitat area' as being 'no decline in habitat area, subject to natural processes'. On the basis of this, it can be assumed that any loss of Annex I habitat within designated SACs would be likely to constitute a significant effect on the site as it would prevent favourable conservation condition for the relevant feature from being achieved.

Mitigation measures aimed at avoiding or reducing the potential for habitat loss to affect European Sites due to the Implementation Plan are presented in Section 5 below. These measures will help to ensure that development within the Implementation Plan will not impact on any European Site¹¹.

¹⁰ 'achievable' means mitigation measures that are part of normal project design and implementation where scientific evidence exists of effectiveness to a degree that removes reasonable doubt.

¹¹ With regard to European sites there should be no significant adverse effects except as provided for in Section 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

4.3.1.2 Disturbance to Key Species

Key species are defined as those listed on the Annexes of the EU Habitats Directive and Birds Directive for which sites are designated. Disturbances to species supported by a European Site are likely to increase where there is an increase in activity levels from developments within or adjacent to designated areas. Sources of disturbance include noise, vibration, or light emanating from construction and/or operational activities.

In relation to the Implementation Plan, disturbance to key species could result from construction related activity associated with providing new transport infrastructure and in maintaining existing infrastructure. Such disturbance would be short term and temporary. There is potential for longer term disturbance throughout the operational phase due to increased traffic and associated activities. The provision of infrastructure may also provide access to previously remote locations thereby having the effect of increasing recreational pressures at sensitive sites.

Those sites that are located in close proximity to and overlap with projects provided for by the Plan that are designated for the protection of vulnerable species include the following:

Site Code	Site Name	Relationship to Plan Provisions	QIs/ SCIs Sensitive to Disturbance
004015	Rogerstown Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.	Wintering wildfowl and waders
004025	Broadmeadow/Swords Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme (including proposals for electrification of the Northern Line as it passes through this site) and GDA Dublin Cycle Network.	Wintering wildfowl and waders
004158	River Nanny Estuary and Shore SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme	Wintering wildfowl and waders

The significance of disturbance at each of these sites will be assessed by lower level AA to be undertaken on the relevant scheme. Similarly, other European Sites may be vulnerable to disturbance from other projects provided for by the Implementation Plan. The potential for disturbance in relation to these projects will depend on the final location and design chosen for relevant projects. AA at the project level will further examine potential effects.

Sites susceptible to disturbance to key species include all those SPAs listed in Table 4.3 above and those SACs with Annex II species included as a qualifying interest.

Cumulative effects of the DART Expansion and the GDA Cycle Network Plan are possible on Rogerstown Estuary SPA and Broadmeadow/Swords Estuary SPA, if unmitigated. These potential effects have previously been identified as in-combination effects during the AA undertaken on both lower tier plans and relevant, achievable mitigation has been included in both Plans to address potential effects. Measures are also included in the Implementation Plan (Section 5, below) addressing these effects.

The SSCOs for SPA sites typically include two attributes relating to each species for which targets are set, namely 'population trend' and 'distribution'. The targets set for these two features are typically:

- Attribute population trend:
 - Long term population trend stable or increasing.
- Attribute distribution:
 - No significant decrease in the range, timing and intensity of use of areas by the conservation interest species as listed, other than that occurring from natural patterns of variation; and
 - No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation.

(c) Adequate compensatory measures in place.

Elements of the Implementation Plan that could prevent the above targets being achieved would constitute significant effects. Data from project specific surveys will inform lower level AA when further project details are known.

Mitigation measures aimed at avoiding or reducing the potential for disturbance to affect European Sites due to the implementation of the Plan are presented in Section 5 below. These measures will help to ensure that development under the Implementation Plan will not have significant effects on any European Site¹¹.

4.3.1.3 Habitat / Species Fragmentation

Habitat and species fragmentation can occur through the breaking up of or loss of habitats resulting in interference with existing ecological units. Fragmentation can also result from impediments to the natural movements of species. This is relevant where important corridors for movement or migration are likely to be disrupted such as along river corridors when construction may introduce a barrier to the free movement of species, such as lighting, between ecological resources.

Habitat/species fragmentation may arise from Implementation Plan’s provisions for the construction of transport infrastructure as this is a key issue associated with linear developments. Sites potentially affected include all those which occur within the study area of the Implementation Plan.

The sites that are located in close proximity to and overlap with projects provided for by the Implementation Plan that would be sensitive to the effects of fragmentation include the following:

Site Code	Site Name	Relationship to Plan Provisions
000205	Malahide Estuary SAC	Within core development area identified in Figure 3.1; site overlapped the DART Expansion Programme & Greenway of GDA Dublin Cycle Network.
000208	Rogerstown Estuary SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme and GDA Dublin Cycle Network.
001398	Rye Water Valley/Carton SAC	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme.
004015	Rogerstown Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme and GDA Dublin Cycle Network.
004025	Broadmeadow/Swords Estuary SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme and GDA Dublin Cycle Network.
004158	River Nanny Estuary and Shore SPA	Within core development area identified in Figure 3.1; site overlapped by the DART Expansion Programme.

The significance of fragmentation at each of these sites will be assessed by lower level AA to be undertaken on the relevant scheme. Considering that the schemes mostly relate to improvement and enhancement of existing infrastructure, it is unlikely that significant fragmentation will arise.

Mitigation aimed at avoiding or reducing the potential for habitat/species fragmentation to affect European Sites due to the Implementation Plan is presented in Section 5 below.

4.3.1.4 Reduction in Species Density

Reduction in species density may result from loss/reduction of habitat area, disturbance, or fragmentation, either individually or in combination with other projects/plans. In addition, changes in habitat quality could lead to reductions in populations of sensitive species.

In relation to the Implementation Plan, reductions in species density could occur where collision risks are introduced to previously undeveloped areas where vulnerable species may be present. The development of overhead power lines associated with the electrification of rail infrastructure could present a collision hazard to vulnerable bird species. In particular, the electrification of the Northern Rail Line at Rogerstown and Malahide Estuary could potentially present a collision risk to bird species for which these sites are designated. The mitigation measures that have been integrated into the

Implementation Plan will help to ensure that this type of development will not affect any European Site. Lower level plans and projects arising through the Implementation Plan will themselves be subject to AA. Detailed information such as how birds use the estuary, or other relevant European Site, particularly in relation to flight paths, feeding and foraging areas will inform lower tier decision making and AA.

The development of linear transport infrastructure in particularly sensitive locations could result in collision between vehicles and wildlife. The significance of such effect will be assessed by lower level AA to be undertaken on the relevant scheme. Considering that the schemes mostly relate to improvement and enhancement of existing infrastructure, it is unlikely that significant effects will arise.

4.3.1.5 Changes in Key Indicators of Conservation Value

The key indicators of conservation value for sites likely to be affected by the Implementation Plan include surface water and groundwater quality and quantity.

Any deterioration in water quality within surface and ground water dependent ecosystems can lead to direct and/or indirect impacts on a range of habitats and species of conservation importance. Similarly, changes in water quantity (water table height; flow regime; flow rates etc.) can also affect many habitats and species that are associated with freshwater and marine European Sites.

In relation to the Implementation Plan, the main sources of such impacts may include:

- Potential discharge of silt laden waters or other pollutants from construction related projects; and
- Potential discharge of contaminated (hydrocarbons) runoff from transport infrastructure during operation phase.

All sites that support aquatic habitats and species would be vulnerable to effects on water quality and quantity.

The potential for in-combination effects to occur due to interaction with other plans, programmes, etc. are examined in more detail in Appendix II. The degree to which effects can be determined is limited as the Implementation Plan will be devised through the lower tier environmental assessments and decision making. Details of the projects that will emanate from the Implementation Plan will allow for a more detailed consideration of environmental effects – including in-combination/cumulative effects – by project level assessments i.e. EIA and AA. Mitigation measures to avoid and minimise potential effects to European Sites are detailed in Section 5 below.

Section 5 Mitigation Measures

5.1 Introduction

This section outlines the measures that have been incorporated into the Implementation Plan in order to mitigate against potential effects to European Sites as identified above.

The Implementation Plan is being prepared in an iterative manner whereby the Implementation Plan and AA documents have each informed subsequent version(s) of the other.

In order to demonstrate that there will be no adverse effects from implementation of the Plan, mitigation measures have been devised to be incorporated into the text of the Plan, described below.

5.2 Measures incorporated into the text of the Implementation Plan

5.2.1 Mitigation

Measures have been included in the policies and objectives of the Implementation Plan that will contribute towards avoidance of effects to the ecological integrity of European Sites.

The main means by which mitigation is provided for is the inclusion of Chapter 4.6 which is dedicated entirely to Environmental Considerations and includes a range of commitments that will help to ensure that the Implementation Plan and any plans or projects provided by same will not result in significant adverse effects on any European Site. The following provisions outlined in Chapter 4.6 of the Implementation Plan will mitigate against potential significant effects identified during the AA.

The Implementation Plan will comply with measures listed in Section 9 (Table 9.2) of the SEA Environmental Report as referred to in Chapter 4.6.7 of the Implementation Plan, which will further mitigate potential adverse effects on the environment. Those measures relevant to the safeguarding all European Sites are reproduced in Table 5.1 below.

Chapter 4.6.1 Regulatory Framework for Environmental Protection and Management

In implementing this Plan, 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, in 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.

Chapter 4.6.2 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:

- Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and Candidate SACs and SPAs;
- 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.

Chapter 4.6.3 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

- 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

- 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, considering 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.

Chapter 4.6.4 Appropriate Assessment

All projects and plans arising from this Plan 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:

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
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 of 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.

Chapter 4.6.5 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 Plan (either individually or in combination with other plans or projects¹²).

¹² Except as provided for in Section 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.

Chapter 4.6.6 Climate Change, Emissions and Energy

As identified in the SEA Environmental Report that accompanies this Plan, the Plan facilitates sustainable mobility and associated positive effects, including those relating to:

- 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 of air quality and protection of human health;
- Reductions in/limits in increases of consumption of non-renewable energy sources and achievement of legally binding renewable energy targets; and
- Energy security.

In implementing the Plan, the Authority will support relevant provisions contained in the National Climate Change Adaptation Framework (2018), the National Mitigation Plan (2017) and the Department of Transport, Tourism and Sport's 2017 "Adaptation Planning – Developing Resilience to Climate Change in the Irish Transport Sector", the National Energy and Climate Plan, Climate Change Action Plans of local authorities and any Regional Decarbonisation Plan prepared on foot of commitments included in the RSEs.

The implementation of the Plan will incorporate relevant targets and actions arising from the sectoral adaptation plan for transport that will be prepared to comply the requirements of the Climate Action and Low Carbon Development Act 2015.

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 change, carbon emissions and energy usage, the Authority will seek to integrate Plan objectives, as appropriate.

Chapter 4.6.7 Other SEA Recommendations

In implementing the Plan, the Authority will ensure that the measures included in Table 9.2 of the SEA Environmental Report are complied with.

Table 5.1 Measures detailed in Table 9.2 of the SEA Environmental Report relevant to the protection of European Sites for the Implementation Plan

<p>Requirement</p> <p>Construction and Environmental Management Plans</p> <p>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 Plan and any lower tier Environmental Impact Assessment Report or Appropriate Assessment. CEMPs typically provide details of intended construction practice for the proposed development, including:</p> <ol style="list-style-type: none"> location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse, location of areas for construction site offices and staff facilities, details of site security fencing and hoardings, details of on-site car parking facilities for site workers during the course of construction, details of the timing and routing of construction traffic to and from the construction site and associated directional signage, measures to obviate queuing of construction traffic on the adjoining road network, measures to prevent the spillage or deposit of clay, rubble or other debris, 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, details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels, 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, disposal of construction/demolition waste and details of how it is proposed to manage excavated soil, 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, details of a water quality monitoring and sampling plan. if peat is encountered - a peat storage, handling and reinstatement management plan. measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed). appointment of an ecological clerk of works at site investigation, preparation and construction phases. details of appropriate mitigation measures for lighting specifically designed to minimise impacts to biodiversity including bats.
<p>Maintenance Plan</p> <p>Lower tier assessments should examine the need for Maintenance Plans informed by environmental considerations to be prepared and implemented.</p>
<p>Air and Energy</p> <p>Contribute towards: compliance with air quality legislation; greenhouse gas emission targets; management of noise levels; and reductions in energy usage.</p>
<p>Protection of Biodiversity including Natura 2000 Network</p> <p>Contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) 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).</p> <p>Contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents):</p> <ul style="list-style-type: none"> EU Directives, including the Habitats Directive (92/43/EEC, as amended)¹³, the Birds Directive (2009/147/EC)¹⁴, the Environmental Liability Directive (2004/35/EC)¹⁵, 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 2008¹⁵ and the Flora Protection Order 2015.

¹³ Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur).

¹⁴ Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).

¹⁵ Including protected species and natural habitats.

<p>Requirement</p> <ul style="list-style-type: none"> 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.
<p>NPWS and Integrated Management Plans</p> <p>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.</p> <p>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 Plan 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.</p>
<p>Coastal Zone Management</p> <p>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.</p>
<p>Biodiversity and Ecological Networks</p> <p>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.</p>
<p>Protection of Riparian Zone and Waterbodies and Watercourses</p> <p>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</p> <p>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>Lighting Sensitive Species</p> <p>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</p> <p>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</p> <p>Support, as appropriate, any relevant recommendations contained in the National Peatlands Strategy 2015.</p>
<p>Water Framework Directive and associated legislation</p> <p>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</p>

Requirement
policy guidance (including any superseding versions of same). Support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.
River Basin Management Plan
Support the implementation of the relevant recommendations and measures as outlined in the relevant River Basin Management Plan, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the Plan. 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 (CFRAMS).
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.
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
Contribute towards the appropriate protection and maintenance of the character, integrity and conservation value of features or areas of geological interest.

Section 6 Conclusion

Stage 1 and Stage 2 AA of the Integrated Implementation Plan 2019-2024 is being carried out. The Implementation Plan has the potential to result in impacts to the integrity of European Sites, if unmitigated.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of all European Sites identified have been addressed by the inclusion of achievable mitigation measures that will prioritise the avoidance of effects in the first place and will reliably mitigate these effects where these cannot be avoided. In addition, all lower level plans and projects arising through the Implementation Plan will themselves be subject to 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 Implementation Plan allow a conclusion to be arrived at that there will be no significant adverse effects as a result of the implementation of the Implementation Plan either alone or in-combination with other plans/projects.

Having incorporated these mitigation commitments; it is considered that the Implementation Plan will not have significant effects on any European Site¹⁶. This evaluation is made in view of the conservation objectives of the habitats and/or species for which these sites have been designated.

¹⁶ Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the plan to proceed; and
- c) Adequate compensatory measures in place.