

SEA STATEMENT

FOR THE

DUBLIN TO GALWAY GREENWAY PLAN

STRATEGIC ENVIRONMENTAL ASSESSMENT

for: Department of Transport, Tourism and Sport
44 Kildare Street
Dublin 2



**An Roinn Iompair
Turasóireachta agus Spóirt**

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Section 1 Introduction

1.1 Introduction and Legislative Context

This is the Strategic Environmental Assessment (SEA) Statement for the Dublin to Galway Greenway Plan.

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

Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the Environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including tourism. The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 and the Planning and Development (Strategic Environmental Assessment) Regulations 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011.

1.2 Content of the SEA Statement

Where SEA is undertaken, the Regulations require that a Statement is made available to the public and the competent environmental authorities after the finalisation of the Plan. This Statement is referred to as an SEA Statement.

The SEA Statement is required to include information summarising:

- a) how environmental considerations have been integrated into the Plan;
- b) how the following have been taken into account during the preparation of the Plan:
 - the environmental report,
 - submissions and observations made to the planning authority on the Draft Plan and Environmental Report, and any transboundary consultations.
- c) the reasons for choosing the Plan in the light of the other reasonable alternatives dealt with; and
- d) the measures decided upon to monitor the significant environmental effects of implementation of the Plan.

1.3 Implications of SEA for the Plan

The determination as to whether or not an SEA is required to be carried out on the Plan by virtue of the Plan being likely to result in significant environmental effects is referred to as screening. The Department of Transport, Tourism and Sport concluded that an SEA was required for the Plan, as it comprises a 'plan or programme' as defined by the SEA Directive which is likely to have significant environmental effects.

SEA has been undertaken and the findings of the SEA are expressed in an Environmental Report, the first published version of which accompanied the Draft Plan on public display. The Environmental Report was updated in order to take account of:

- Recommendations contained in submissions; and
- Minor changes to the Draft Plan that were made on foot of submissions.

The Department have taken into account the findings of all relevant SEA output during their consideration of the Draft Plan and before the Draft Plan was adopted.

Section 2 How Environmental Considerations were integrated into the Plan

2.1 Introduction

The Plan sets out the Department's high-level vision, policy and objectives for the development of a greenway between Dublin City to Clifden, Galway via Galway City.

The Plan document is text based and does not identify a route for the greenway¹. The greenway will be developed at project level at which Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) will be undertaken as relevant.

All SEA and AA recommendations have been integrated into the Plan.

2.2 Consultations

As environmental authorities identified under the Planning and Development (SEA) Regulations, as amended, the following authorities were sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Department of Transport, Tourism and Sport; Department of Agriculture, Food and the Marine; Department of Arts, Heritage and the Gaeltacht; Department of Communications, Energy and Natural Resources; Department of the Environment, Community and Local Government; Environmental Protection Agency; Dublin City Council; Fingal County Council; Dún Laoghaire-Rathdown County Council; South

¹ The Greenway Plan is a high-level, strategic, text based document which does not identify the design, route or possible route corridors for the greenway. Details of the project(s) which will emanate from the 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.

The Greenway Plan constitutes an assemblage of elements – some will be new, some exist already, some are being developed as parts of existing local initiatives. Furthermore the Greenway contains elements that have already been adopted – following consultation and assessment - into County and Local Plans.

Finally, some parts of the final scheme may consist of elements that emerge from new and emerging local plans and initiatives.

Dublin County Council; Meath County Council; Kildare County Council; Westmeath County Council; Offaly County Council; Longford County Council; Roscommon County Council; Galway County Council; and Galway City Council.

Further detail on submissions made on foot of the SEA scoping notice is provided under Section 3.2.

Furthermore, submissions were made on the Draft Plan and SEA Environmental Report while they were on public display and these resulted in updates being made to the SEA documents (see Section 3.3).

2.3 Communication of environmental sensitivities throughout the SEA process

2.3.1 Relevant aspect of the current state of the Environment

Environmental considerations were integrated into the Plan before it was placed on public display and included the following components:

- Climatic factors and ambient air quality;
- Material assets, including: settlements, existing linear infrastructure, state owned lands, water services and waste management;
- Population and human health;
- Biodiversity and flora and fauna;
- Soil;
- Water, including: Water Framework Directive Status of surface and ground waters, Water Framework Directive Register of Protected Areas and flooding;
- Cultural heritage, including: archaeological heritage and architectural heritage; and
- Landscape.

2.3.2 Appropriate Assessment

Stage 2 Appropriate Assessment (AA) has been undertaken alongside the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC).

The AA concluded that the Plan will not affect the ecological integrity of the European Sites².

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

2.4 Suggestions of Plan provisions to mitigate effects

The SEA and AA processes which have been undertaken alongside the preparation of the Plan have brought about changes to the emerging Plan thereby enabling the mitigation of any potentially adverse environmental effects.

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan.

All recommendations made by the SEA and AA processes were integrated into the Plan. The changes which have been brought about by the SEA and AA processes are detailed in Table 2.1 below which also link the changes to specific environmental components and the potential adverse effects which would be present if the changes were not made.

² 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
- (c) adequate compensatory measures in place.

Table 2.1 Provisions contained in Plan Appendix I 'Environmental Management and Sustainable Development'

Environmental Component	Potentially Significant Adverse effect, if unmitigated	Mitigating Provision included in Appendix I
All	Various below	<p>Key Measure: Environmental Constraints and Opportunity Mapping</p> <p>Environmental Constraints and Opportunity mapping will be prepared at project level as part of lower tier planning and environmental assessment. The mapping will allow the identification of the areas that are most sensitive with respect to the development of a greenway and those that are most suited. Opportunities and constraints will be overlain upon each other using a Geographical Information System, allowing for the identification of Opportunity Corridors. Planning/Environmental Assessment teams may augment the datasets to be included to ensure that they are appropriate to the parts of the project being considered and differentiation in the weighting of certain layers may be applied. Additional datasets of the SEA Environmental Report may be considered for inclusion in the mapping where relevant/appropriate or during further detailed refinement of the route. It is emphasised that the occurrence of constraints does not necessarily preclude development; rather it flags where specific mitigation measures may be required to ensure that adverse effects do not occur. Some components, such a cultural heritage, for example, are included as both constraints and opportunities as these would be both attractive to greenway users and potentially sensitive to the construction of a greenway and associated development.</p> <p>The following datasets will be used by constraints mapping:</p> <ul style="list-style-type: none"> • Candidate Special Areas of Conservation and Special Protection Areas; • Features of the landscape that provide linkages/connectivity to designated sites (e.g. watercourses, areas of semi-natural habitat such as linear woodlands etc) • Salmonid Waters; • Shellfish Waters; • Freshwater Pearl Mussel catchments; • Nature Reserves; • Natural Heritage Areas and proposed Natural Heritage Areas; • Areas likely to contain a habitat listed in annex 1 of the Habitats Directive (from CORINE land cover mapping); • Information on badger sets from the Department of Agriculture, Food and the Marine, relevant datasets from the National Biodiversity Data Centre and BirdWatch Ireland's 'Important Bird Areas'; • Entries to the Record of Monuments and Places and Zones of Archaeological Potential; • Entries to the Record of Protected Structures; • Un-designated sites of importance to wintering or breeding bird species of conservation concern; • Architectural Conservation Areas; and • Relevant landscape designations. <p>The following datasets will be used by opportunities mapping:</p> <ul style="list-style-type: none"> • Proximity to settlements (400m³ buffer to be applied around towns and villages); • Existing linear infrastructure (canal rights of way, river corridor rights of way, railway rights of way, motorways/roads, cycle networks along roads and through parks and tracks on state owned lands); • Entries to the Record of Monuments and Places; • Zones of Archaeological Potential; • Entries to the Record of Protected Structures; • Architectural Conservation Areas; • Relevant landscape designations; and • Slope⁴.

³ 400m is the typical accepted walking catchment in urban design e.g. referenced in Department of Transport, Tourism and Sport and Department of Environment, Community and Local Government (2013) *Design Manual for Urban Roads and Streets*

⁴ Generally a maximum gradient of 3% is preferred where possible (steep inclines and difficult to climb and may exclude some users) and a minimum gradient of 0.5% (to facilitate drainage)

[Manton & Clifford (2011) 'Rural cycle route design' in *Proceedings of the ITRN2011 31st August – 1st September*, University College Cork]

<p>All</p>	<p>Various below</p>	<p>Key Measure: Corridor and Routeway Selection Process The following Corridor and Routeway Selection Process will be undertaken for the greenway as follows:</p> <p>Stage 1 Route Corridor Identification, Evaluation and Selection</p> <p>The environmental constraints and opportunities will assist in the identification of possible route corridor options.</p> <p>Potentially feasible corridors within which a greenway 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 determined by the relevant specialists.</p> <p>In addition to the constraints identified above, site specific field data may be required to identify the most appropriate corridor.</p> <p>Stage 2 Routeway Identification, Evaluation and Selection</p> <p>Potentially feasible routeways within the preferred corridor will be identified and assessed. The selection of the preferred routeway will avoid constraints and meet opportunities to the optimum extent, as determined by the relevant specialists, taking into account project level information and potential mitigation measures.</p> <p>In addition to the constraint identified above, site specific field data may be required to identify the most appropriate route.</p> <p>In addition to environmental considerations, the identification of route corridors and the refinement of the route line is likely to be informed by other considerations such as access to lands, perceptions of safety and attractiveness, costs and benefits and ease of maintenance.</p>
<p>All</p>	<p>Various below</p>	<p>Regulatory framework for environmental protection and management The Department is committed to cumulatively contributing towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management. The Department will ensure, as appropriate, that plans, programmes and projects comply with EU Directives - including the Habitats Directive (92/43/EEC, as amended), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (85/337/EEC, as amended) and the Strategic Environmental Assessment Directive (2001/42/EC) – and relevant transposing Regulations.</p>
<p>All</p>	<p>Various below</p>	<p>Construction and Environmental Management Plan A Construction Environment Management Plan (CEMP) shall be prepared in advance of the construction of the project and implemented throughout. This plan shall incorporate relevant mitigation measures indicated in the SEA Environmental Report and any lower tier Environmental Impact Statement or Appropriate Assessment. CEMPs typically provide details of intended construction practice for the proposed development, including:</p> <ol style="list-style-type: none"> a. location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse, b. location of areas for construction site offices and staff facilities, c. details of site security fencing and hoardings, d. details of on-site car parking facilities for site workers during the course of construction, e. details of the timing and routing of construction traffic to and from the construction site and associated directional signage, f. measures to obviate queuing of construction traffic on the adjoining road network, g. measures to prevent the spillage or deposit of clay, rubble or other debris, h. alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public right of way during the course of site development works, i. details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels, j. containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater, k. disposal of construction/demolition waste and details of how it is proposed to manage excavated soil, l. a water and sediment management plan, providing for means to ensure that surface water runoff is controlled such that no silt or other pollutants enter local water courses or drains, m. details of a water quality monitoring and sampling plan. n. if peat is encountered - a peat storage, handling and reinstatement management plan. o. measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed). p. appointment of an ecological clerk of works at site investigation, preparation and construction phases. q. details of appropriate mitigation measures for lighting specifically designed to minimise impacts to biodiversity.

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All	Various below	<p>Maintenance Plan Lower tier assessments should examine the need for Maintenance Plans informed by environmental considerations to be prepared and implemented.</p>
Air and climatic factors	None	<p>Maximising positive effects on sustainable mobility In order to maximise positive effects on sustainable mobility (and associated benefits regarding greenhouse gas emissions, noise emissions and other emissions to air and human health), the Department will seek to, taking into account other factors such as environmental protection and planning considerations:</p> <ul style="list-style-type: none"> • Maximise the length of greenway developed along existing linear infrastructure, taking into account other factors such as environmental protection and planning considerations; and • Maximise the number of settlements within the greenway's catchment area.
Material Assets	<p>- The need to provide adequate and appropriate water services (it is the function of Irish Water to provide for such needs)</p> <p>- Increases in waste levels</p>	<p>Construction Waste All waste arising during the construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Acts and regulations and any of the relevant Local Authorities Waste Management Plans. A Construction Waste Management Plan will be implemented to minimise waste and ensure correct handling and disposal of construction waste streams in accordance with the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment, July 2006.</p> <p>Waste Creation Support the minimisation of waste creation and promote a practice of reduce, reuse and recycle where possible.</p> <p>Waste Disposal Safeguard the environment by seeking to ensure that residual waste is disposed of appropriately.</p> <p>Irish Water Co-operate with and support, as relevant and appropriate, Irish Water in its new role as the lead authority for water services.</p>
Population and human health	<p>-Potential interactions if effects upon environmental vectors such as water are not mitigated</p>	<p>Human Health Proposals for development shall be assessed in terms of, inter alia, potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed development would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, the Department shall ensure the introduction of mitigation measures in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level. Also see measures related to soil, water quality, air quality, flooding, waste water treatment and drinking water supply and quality.</p>
Biodiversity and flora and fauna	<p>- Arising from both construction and operation of the greenway and associated facilities/infrastructure: loss of/damage to biodiversity in designated sites, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna</p> <p>- Habitat loss, fragmentation and deterioration, including patch size and edge effects</p> <p>- Disturbance and displacement of</p>	<p>Visitor Management Strategy</p> <ul style="list-style-type: none"> • Research by Fáilte Ireland in the Burren has shown improved environmental outcomes (improved attainment of conservation objectives) in areas with visitor management strategies. A visitor management strategy during the implementation of the Greenway project could contribute positively to advancing the attainment of conservation objectives along and adjacent to the route, thereby benefitting the management of designated sites. Based on existing Waterways Ireland and Office of Public Works visitor management strategy practices, the Department will ensure that a visitor management strategy informs the implementation of the Greenway project. <p>Protection of Biodiversity including Natura 2000 Network 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). The protection of natural heritage and biodiversity, including European sites that form part of the Natura 2000 network, will be implemented in accordance 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), the Birds Directive (2009/147/EC), the Environmental Liability Directive (2004/35/EC), the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). • National legislation, including the Wildlife Act 1976, the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011), the European Communities (Environmental Liability) Regulations 2008 and the Flora Protection Order 1999. • National policy guidelines, 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 River Basin District Management Plans 2009-2015. • Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: and Ireland's National Biodiversity Plan.

	<p>protected species and coastal squeeze - Effects in riparian zones where new crossings of waters, if any, are progressed</p>	<ul style="list-style-type: none"> • Ireland’s Environment 2015 (EPA, 2016), and to make provision where appropriate to address the report’s goals and challenges. <p>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 a Stage 2 Appropriate Assessment where necessary, that:</p> <ol style="list-style-type: none"> 1. The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or 2. The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or 3. The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000. <p>Protection of Natura 2000 Sites No projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 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 projects⁵).</p> <p>Areas of geological interest Contribute towards, as appropriate, the protection and maintenance of the character, integrity and conservation value of features or areas of geological interest.</p> <p>NPWS & Integrated Management Plans The Department shall endeavour to engage with the National Parks & Wildlife Service to ensure Integrated Management Plans are prepared for all Natura sites and ensure that plans are fully integrated with the Greenway Plan and other plans, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations and with special regard to local communities.</p> <p>Coastal Zone Works undertaken in coastal areas will be in accordance with best practice and the Department will, as appropriate, support measures to protect the coast, the coastal edge and coastal habitats. The Department will seek, as appropriate, to contribute towards an Integrated Coastal Zone Management approach to ensure the conservation, management and protection of man-made and natural resources of the coastal zone.</p> <p>National Peatlands Strategy To implement any relevant recommendations contained in the Department of Arts, Heritage and the Gaeltacht’s National Peatlands Strategy, when finalised.</p> <p>Biodiversity and Ecological Networks Support, as appropriate, 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>Waters Contribute towards, as appropriate, the protection of the water resources, 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 relevant River Basin Management Plans and other relevant EU Directives, including associated national legislation and 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.</p> <p>Protection of Riparian Zone and Waterbodies and Watercourses Protect waterbodies and watercourses from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include protection buffers in riverine, wetland and coastal areas as appropriate, especially between designated sites and cycle lanes and associated infrastructure.</p>
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⁵ 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 to proceed; and
- c) Adequate compensatory measures in place.

		<p>Non-Designated Sites Recognise that nature conservation is not just confined to designated sites and acknowledge the need to protect non-designated habitats and landscapes and to conserve the biological diversity.</p> <p>Non-native invasive species Support, as appropriate, the National Parks and Wildlife Service's efforts to seek to control the spread of non-native invasive species on land and water.</p>
Water	<p>- Potential interactions with the status of water bodies and entries to the WFD Register of Protected Areas, arising from:</p> <ul style="list-style-type: none"> - Changes in quality, flow and/or morphology at construction stage (including of greenway and associated facilities/infrastructure); and - Increases in outflow at waste water treatment plants as a result of increases in numbers of visitors to settlements along the route. - Increase in the risk of flooding 	<p>Directives and Regulations Contribute towards, as appropriate, the protection of existing and potential water resources, and their use by humans and wildlife, in accordance with the EU Water Framework Directive, 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) or any updated legislation.</p> <p>River Basin Management Plan Support the implementation of the relevant recommendations and measures as outlined in the various relevant River Basin Management Plans, and associated Programmes of Measures, or any such plans that may supersede same during the lifetime of the Greenway Plan, as well as relevant recommendations contained in the Water Quality in Ireland 2010-2012 (EPA, 2015, and any updated/superseding document). The Department will seek to demonstrate that proposals for development would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated woodlands and coastal waters. Also the Department will have cognisance of, where relevant, the EU's Common Implementation Strategy Guidance Document No. 20 which provides guidance on exemptions to the environmental objectives of the Water Framework Directive.</p> <p>Bathing Water Contribute towards the achievement of the requirements of the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008) and EU Mandatory Values, as a minimum, and EU Guide Values, where possible.</p> <p>Flood Risk Management Guidelines Support, as appropriate, in co-operation with the OPW and planning authorities, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010), the DEHLG/OPW publication <i>The Planning System and Flood Risk Management Guidelines</i> (2009) (and any updated/superseding legislation or policy guidance) and relevant outputs of the Catchment and Flood Risk Assessment and Management Studies (CFRAMS).</p> <p>Improvement and/or Restoration of Natural Flood Risk Management Functions Support, subject to compliance with the Habitats and Birds Directives, the improvement and/or restoration of the natural flood risk management functions of flood plains.</p> <p>Surface Water Drainage and Sustainable Drainage Systems (SuDs) Ensure that new development is adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems as appropriate. Also see measures related to water quality and waste water treatment.</p>
Soil	<p>Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of associated facilities/infrastructure</p>	<p>Soil Protection and Contamination The Department shall ensure that adequate soil protection measures are undertaken where appropriate. Adequate and appropriate investigations shall be carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work, where brownfield development is proposed.</p>

Cultural Heritage	Potential effects on protected and unknown archaeology and protected architecture arising from construction activities (for both greenway and associated facilities/infrastructure)	<p>Archaeological Heritage Contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage, in particular by implementing the relevant provisions of the Planning and Development Act 2000 (as amended) and the National Monuments Act, 1930 (as amended).</p> <p>Protection of Archaeological Sites Contribute, as appropriate, towards the protection of archaeological sites and monuments and their settings, archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments. Contribute, as appropriate, towards the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.</p> <p>Consultation Consult with the National Monuments Service of the Department of Arts Heritage and the Gaeltacht in relation to proposed developments adjoining archaeological sites.</p> <p>Underwater Archaeological Sites Contribute, as appropriate, towards the protection and preservation of underwater archaeological sites in riverine, intertidal and sub-tidal locations.</p> <p>Architectural Heritage Ensure the appropriate protection of architectural heritage by complying, as appropriate, with the legislative provisions of the Planning and Development Act 2000 (as amended) in relation to architectural heritage and the policy guidance contained in the Architectural Heritage Protection Guidelines 2011 (and any updated/superseding document).</p>
Landscape	Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape	<p>Landscape Designations Contribute, as appropriate, towards the protection of county and local level landscape designations and Special Amenity Area Order designations from incompatible developments. Proposals for development that have the potential to significantly adversely impact upon these designations shall be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.</p> <p>Coastal Areas and Seascapes Protect the character and visual potential of the coast and conserve the character and quality of seascapes.</p> <p>National Landscape Strategy Support, as appropriate, any relevant recommendations contained in the Department of Arts, Heritage and the Gaeltacht's National Landscape Strategy for Ireland.</p>

Section 3 Environmental Report and Submissions/Observations

3.1 Introduction

This section details how both the Environmental Report and submissions and observations made to the Department on the Environmental Report and SEA process have been taken into account during the preparation of the Plan.

- Scoping process guidance;
- Recent data sets available from the EPA; and
- Environmental authorities that should be notified as a part of scoping process.

The submission from Roscommon County Council acknowledged receipt of notification about undertaking the SEA.

3.2 SEA Scoping Submissions

The submission from Department of Arts, Heritage and the Gaeltacht addressed a number of heritage-related observations/issues including the following:

3.2.1 Introduction

As part of the SEA scoping process, environmental authorities were notified that a submission or observation in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Department.

- Nature conservation;
- Available data/information;
- Issues of potential concern;
- Other plans and projects;
- Key ecological/natural heritage issues; and
- SEA Environmental Report.

Submissions – all of which were taken into account by the SEA scoping process – were made by the following environmental authorities:

The submission from Galway City Council addressed issues including the following:

1. Longford County Council;
2. Environmental Protection Agency;
3. Roscommon County Council;
4. Department of Arts, Heritage and the Gaeltacht⁶;
5. Galway City Council;
6. Kildare County Council;
7. Westmeath County Council;
8. Offaly County Council;

- Information to be included in the SEA Environmental Report; and
- Sources of information to be considered in the Environmental Report preparation.

The submission from Longford County Council addressed issues related to a route for the Greenway.

The submission from Kildare County Council included information on the relevant provisions of land use plans in force in County Kildare.

The submission from the Environmental Protection Agency addressed issues including the following:

The submission from Westmeath County Council addressed the following issues:

- Specific aspects to be considered in the Plan and SEA;
- Reference to other specific plans/programmes;

- Obligation for protection of ecological corridors and connectivity;
- Economic benefits in terms of tourism sector and potential for growth in visitor numbers;
- Potential of cycleway linkages to settlements and established visitor attractions and rural settlements and potential for securing economic benefits and opportunities for related rural enterprise;
- To include Wetlands and peatlands and the environmental impacts of the River

⁶ Now, the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs

- Shannon and its environs crossing should to be the Scoping Report; and
- To include the Athlone Waterfront Study and the Athlone Canal Study (as reference sources).

The Department of Transport, Tourism and Sport have taken into account the findings of all relevant SEA output during their consideration of the Draft Plan and before the Plan was adopted.

The submission from Offaly County Council addressed the following topics:

- Policy context;
- Alternatives; and
- Consultation.

Specific changes to the **Scoping Report** that arose from this process included those relating to baseline information, potential impacts and mitigation measures. These changes were carried through to the SEA Environmental Report and Draft Plan preparation stages.

3.3 Submissions on the Environmental Report

Furthermore, submissions were made on the Draft Plan, SEA Environmental Report and AA Natura Impact Statement while these documents were on public display and these resulted in updates being made to the documents.

Updates made to the SEA Environmental Report and AA Natura Impact Statement on foot of these submissions include those detailed at Table 3.1 below.

3.4 Environmental Report

The Draft Plan and accompanying documents (including SEA Environmental Report and AA Natura Impact Statement) were placed on public display, having integrated all recommendations arising from the SEA and AA processes.

Responses to submissions made on the Environmental Report during the period of public display were considered by the Department of Transport, Tourism and Sport.

The SEA Environmental Report was updated in order to take account of recommendations included in the submissions as well as minor changes which were made to the original Draft Plan that was placed on public display.

Table 3.1 Updates to the Plan/SEA/AA from Submissions

<p>Updates New text in <i>italics</i> / deleted text in black strikethrough / existing text in normal black font</p>
<p>To update the text in Section 2.1 of the SEA Environmental Report as follows:</p> <p>The Plan document is text based and does not identify a route for the greenway (<i>please refer to Section 2.2 for further detail</i>).</p>
<p>To update text in Table 9 of the AA Natura Impact Statement as follows:</p> <p>Proposed Galway City to Barna Greenway Plan Connemara Greenway (Clifden to Oughterard)</p> <p>The development would consist of a greenway from Barna in Connemara to Eyre Square in Galway City. The Connemara Greenway will consist of a 76km greenway linking Galway City to Clifden, upon completion it will be the longest greenway in Ireland, which follows the route of the disused Galway to Clifden railway.</p> <p>Potential for in-combination effects if unmitigated. The proposed Galway City to Barna Greenway Plan, and Galway to Clifden Greenway will also increase pressures on European sites potentially affected by the development of the Dublin to Galway Greenway.</p>
<p>As detailed in the Public Notice that was placed on public display, any submission made would be taken into account before the finalisation of the Plan. The tense of the cited text (from Section 6 of the AA Natura Impact Statement) contains an error and, consistent with text elsewhere in the AA document, including on the cover and in the various headers, the text should refer to the Plan being Draft. The text should read as detailed below:</p> <p>Stage 1 Screening and Stage 2 AA of the Dublin to Galway Greenway Plan <i>are being</i> have been carried out. It has been demonstrated that implementation of the <i>Draft</i> Plan has the potential to result in adverse impacts to the integrity of the Natura 2000 network of sites, if unmitigated.</p> <p>The risks to the safeguarding and integrity of the qualifying interests and conservation objectives of the Natura 2000 network have been addressed by the recommended inclusion of mitigation measures to the document that will prioritise the avoidance of impacts in the first place and mitigate impacts where these cannot be avoided. In addition, all lower level plans and projects arising through the implementation of the Plan will themselves be subject to AA when further details of design and location are known.</p> <p>Having incorporated these suggested mitigation measures; it is considered that the <i>Draft</i> Plan will not have significant impacts on the Natura 2000 network of sites.</p>
<p>To update the text under 'Strategic Environmental Assessment' in the Glossary of the SEA Environmental Report as follows:</p> <p><i>Consideration of potential land ownership rights/private property rights/land acquisition issues/constitutional issues/social effects/economic effects/political effects are not appropriate to Strategic Environmental Assessment, which evaluates the likely significant environmental effects of implementing the Plan. Environmental effects as a result of providing for a greenway on land (including private and public land and agricultural and non-agricultural land) are considered under the relevant environmental components.</i></p>
<p>To add a footnote to the following sentence in Section 1.1 of the Natura Impact Statement as indicated:</p> <p>Appropriate Assessment (AA) is an assessment of whether a plan or project, alone and in combination with other plans or projects, could have significant effects⁸ on a European site in view of the site's conservation objectives.</p> <p>Footnote: ⁶ <i>Consideration of potential land ownership rights/private property rights/land acquisition issues/constitutional issues/social effects/economic effects/political effects are not relevant to Appropriate Assessment. Effects as a result of providing for a greenway on land (including private and public land and agricultural and non-agricultural land) are assessed in relation to European sites in view of their conservation objectives.</i></p>

Updates

New text in *italics* / deleted text in ~~black strikethrough~~ / existing text in normal black font

To update the text in Section 4.4.1 of the SEA Environmental Report as follows:

Resources that are valued and that are intrinsic to specific places are called 'material assets'. Material Assets relevant to this SEA include:

- Settlements;
- Existing linear infrastructure;
- State owned lands (note ownership is a planning issue); and
- Water services.

Other material assets covered by the SEA include archaeological and architectural heritage (see Section 4.9) natural resources of economic value, such as air and water (see Sections 4.3 and 4.8).

Material assets also include all land (including private and public land and agricultural and non-agricultural land).

Consideration of potential land ownership rights/private property rights/land acquisition issues/constitutional issues/social effects/economic effects/political effects are not appropriate to Strategic Environmental Assessment, which evaluates the likely significant environmental effects of implementing the Plan. Environmental effects as a result of providing for a greenway on land (including private and public land and agricultural and non-agricultural land) are considered under the relevant environmental components.

Section 4 Reasons for choosing the selected alternative in light of other alternatives considered

4.1 Introduction

As per the requirements of the SEA Directive, this SEA considers reasonable alternatives, which are capable of being implemented for the Greenway Plan, taking into account the objectives and the geographical scope of the Plan. The vision of the Plan is to:

Develop a segregated cycling and walking trail to international standards, extending from Dublin City to Galway which is of a scale that will allow Ireland to harness the potential of an identified growing tourism market for cycling. This route will form part of an interconnected National Cycle Network of high quality, substantially traffic free, inter urban routes, which will establish Ireland as a quality international tourism destination for a broad range of associated recreational activities and pursuits.

4.2 Summary Description of Strategic Alternatives

The final Greenway will consist of a combination of a number of existing and new components. Not all of these elements can be foreseen at this time. 'Scenarios' that describe different alternative combinations of elements are often used to consider the effects of a range of possible outcomes and their associated environmental effects.

The following three main scenarios are examined:

Scenario 1: Maximum Use of Existing and Previously Permitted Components.

Existing pathways along canals, rivers and publically accessible rural lands would be used, as well as existing public roads and pathways in both urban and rural areas. This scenario would use the least number of new projects that have not yet been permitted or included in existing, assessed plans. This scenario would also use existing plans and/or permitted projects where these have been subject to a consent process that has previously included the carrying out or screening for SEA/EIA and/or AA.

Scenario 2: Substantial Use of Existing and Some Use of New Projects

In this scenario, the above-mentioned existing components would be augmented in places by more optimal routes that would involve new works – such as additional paths, routes and crossings of streams, rivers, canals, road, rail or bog. It is anticipated that all such components would be subject to relevant assessment including SEA, EIA, and AA etc.

Scenario 3: Use of Existing and Substantial New Elements

In this scenario, the Greenway would involve the development of substantial new components. This may involve bypassing and or duplicating existing and/or permitted elements. It is anticipated that all such components would be subject to relevant assessment including SEA, EIA, and AA etc.

4.3 Summary Description of Routing Alternatives

Alternatives for the development of the greenway comprise:

Canal

1. Along existing canal right of way
2. Outside of canal right of way

River

3. Within the River Corridor
4. Outside of the River Corridor

Railway

5. Within the Railway right of way
6. Outside of the Railway right of way

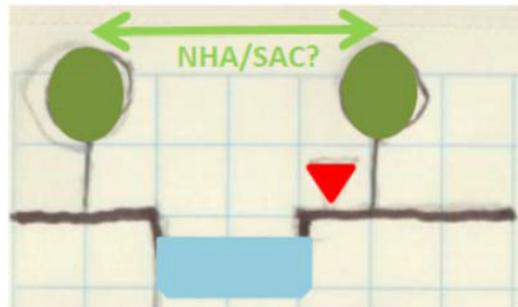
Roads

7. Along road (shared on smaller roads, for shorter distances)
8. Along roadside (cycleways)
9. Outside of road right of way

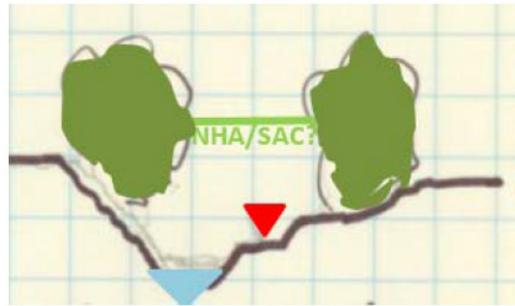
Tracks on State owned lands

10. Tracks on Forestry lands
11. Tracks on Peatland lands

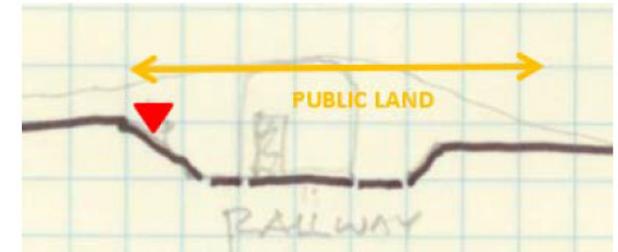
Sketches for alternatives 1 to 10 are provided on Figure 4.1 overleaf.



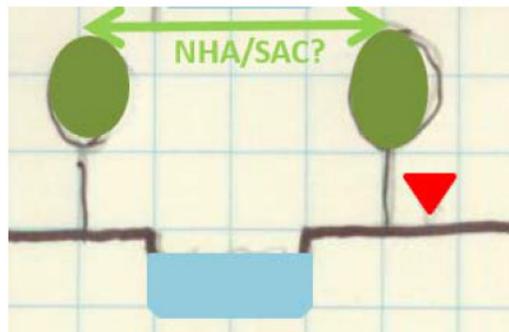
1. Within Canal right of way



3. Within River Corridor



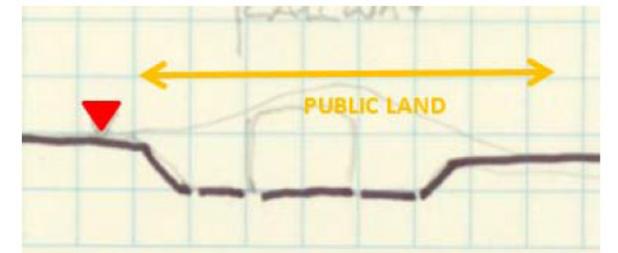
5. Within Railway right of way



2. Outside of Canal right of way



4. Outside of River Corridor



6. Outside of Railway right of way



7. Along road (shared on smaller roads)



8. Fringe to road right of way (cycleways)



9. Outside of road right of way

Figure 4.1 Sketches of Alternatives

4.4 Summary Evaluation of Strategic Alternatives

Scenario One: Maximum use of existing and previously permitted components

By using existing pathways along canals, rivers and publically accessible rural lands and using existing public roads and pathways in both urban and rural areas, this scenario would minimise potential adverse environmental effects arising from developing new projects that have not yet been permitted or included in existing, assessed plans. By using existing plans and/or permitted projects where these have been subject to a consent process that has previously included the carrying out or screening for SEA/EIA and/or AA, this scenario would further contribute towards minimising potential adverse environmental effects arising from developing new projects that have not yet been permitted or included in existing, assessed plans.

Scenario Two: Substantial use of existing and some use of new projects

Augmenting the above-mentioned existing components would in places by more optimal routes that would involve new works – such as additional paths, routes and crossings of streams, rivers, canals, road, rail or bog – that would present a variety of potentially adverse environmental effects. It is anticipated that all such components would be subject to relevant assessment including SEA, EIA, and AA etc.

Scenario Three: Use of existing and substantial new elements

The development of substantial new components under this scenario – including possible bypassing and or duplicating existing and/or permitted elements – would involve the greatest amount of potentially adverse environmental effects. It is anticipated that all such components would be subject to relevant assessment including SEA, EIA and AA etc.

The content of the Plan mainly reflects scenarios 1 and 2. The Greenway Plan constitutes an assemblage of elements – some will be new, some exist already, some are being developed as parts of existing local initiatives. Furthermore, the Greenway contains elements that have already been adopted – following consultation and assessment - into County and Local Plans. Finally, some parts of the final scheme may consist of elements that emerge from new and emerging local plans and initiatives.

4.5 Summary Evaluation of Routing Alternatives

Air and Climatic Factors and Human Health

All alternatives would be likely to result in significant positive effects upon objectives relating to air and climatic factors as they would improve options for sustainable mobility (cycling and walking), thereby reducing and limiting increases in greenhouse gas emissions, noise emissions and other emissions to air⁹.

By reducing and limiting increases in noise emissions and other emissions to air, **all alternatives** would be likely to contribute towards the protection of human health¹⁰.

Population

All alternatives provide opportunities to route the greenway close to populations resident in settlements across the country¹¹.

⁹ SEO C1

¹⁰ SEO HHI

¹¹ SEO P1

Water Services

The greenway will comprise one of many types of infrastructure and services which will support existing populations and facilitate new populations. Consequently, **each of the alternatives** would, in combination with land use plans for the distribution of populations and other sectoral plans such as for the provision of water services, potentially interact with the need to provide adequate and appropriate water services (waste water and drinking water). It is the function of Irish Water to provide for these needs¹².

Existing Linear Infrastructure and Waste

The use of existing linear infrastructure varies across the alternatives. Developing the greenway along existing canal right of ways, within existing railway rights of way, along roads or the roadside and along existing tracks on forestry and peatland lands (**Alternatives 1, 5, 7, 8, 10 and 11**) would make most use of existing infrastructure and routes¹³.

Developing the greenway outside of the canal right of way, within or outside of river corridors and outside of railway and road right of ways (**Alternatives 2, 3, 4, 6 and 9**) would be likely to require the most amount of new infrastructure¹⁴ and result amounts of associated potential wastes¹⁵ (from materials and excavations).

Development of the greenway along existing linear infrastructure would be unlikely to affect flood risk management issues¹⁶ while drainage would be taken into account into the design of new infrastructure thereby mitigating¹⁷ or enhancing any interaction with flood risk issues¹⁸. By protecting certain areas from the encroachment of development, the greenway could make contributions towards climate adaptation and flood risk management.

Biodiversity, Flora and Fauna, Water, Soil and Human Health

By protecting certain areas from the encroachment of development, all alternatives would provide for a continuation of (and further contribution towards) the protection of ecological, water and soil resources along the greenway route¹⁹.

Research by Fáilte Ireland in the Burren has shown improved environmental outcomes (improved attainment of conservation objectives) in areas with visitor management strategies. A visitor management strategy during the implementation of the Greenway project could contribute positively to advancing the attainment of conservation objectives along and adjacent to the route, thereby benefitting the management of designated sites²⁰.

By reusing existing linear infrastructure and reducing the need for new construction, **Alternatives 1, 5, 7, 8, 10 and 11**, would avoid some potentially adverse effects upon ecology (e.g. habitat loss/fragmentation, species disturbance/displacement and effects in riparian zones where new crossings of waters, if any, are progressed²¹), water (e.g. adverse effects upon status of waters arising from changes in quality, flow and/or morphology at construction stage or increases in outflow at waste water treatment plants²²), soil (e.g. loss of hydrogeological and ecological function as a result of construction of associated facilities/infrastructure on greenfield lands²³) and human health (interactions with environmental vectors²⁴).

¹² SEOs M1 M2

¹³ SEO M4

¹⁴ SEO M4

¹⁵ SEO M3

¹⁶ SEO W3

¹⁷ SEO W3

¹⁸ SEO W3

¹⁹ SEOs B1 B2 B3 W1 W2 S1

²⁰ SEOs B1 B2 B3

²¹ SEOs B1 B2 B3

²² SEOs W1 W2

²³ SEO S1

Nonetheless there would be potential for adverse effects to arise, if unmitigated, as a result of, for example, new signage and route maintenance and use. As with other issues, detailed project level examination would be required, especially with respect to: **Alternative 1** 'Within Canal right of way', as the Royal and Grand Canals are designated as proposed Natural Heritage Areas (pNHAs) and traverse a number of candidate Special Areas of Conservation (cSACs); and **Alternative 11** 'Tracks on Peatland lands', due to the protection afforded by the Habitats Directive to certain peatlands.

Alternatives 2, 3, 4, 6 and 9 comprise the development of new routes for the greenway and would require the most amount of new infrastructure and construction. Consequently these alternatives would present the potential for significant adverse effects upon ecology, water, soil and human health, generally to a greater extent than Alternatives 1, 5, 7, 8, 10 and 11.

Alternative 3 'Within River Corridor' poses the greatest potential for the occurrence of significant effects upon ecology, water and soil resources due to the concentration of designations and sensitivities which can occur within river corridors.

Cultural Heritage and Landscape

All alternatives would provide opportunities for the continuation of (and further contribution towards) the protection from development of cultural heritage structures and landscape designations which are located within and adjacent to the greenway corridor²⁵.

By reusing existing linear infrastructure and reducing the need for new construction, **Alternatives 1, 5, 7, 8, 10 and 11**, would avoid some potentially significant adverse effects upon archaeological and architectural heritage²⁶, including context, and landscape designations²⁷. Nonetheless there would be potential for adverse effects to arise (if unmitigated) as a result of, for example, minor construction or new signage.

Due to the need to construct new routes for the greenway, **Alternatives 2, 3, 4, 6 and 9** would have the potential to result in significant adverse effects upon archaeological heritage²⁸ (e.g. disturbance of unknown archaeology or effects upon the context of archaeology) and architectural heritage²⁹ (e.g. effects upon the context of architectural heritage) and landscape designations³⁰. Higher concentrations of landscape designations and cultural heritage would be likely to occur within or adjacent to river corridors (see **Alternative 3** 'Within River Corridor' and **Alternative 4** 'Outside of River Corridor').

Comparative Evaluation against SEOs

provides a comparative evaluation of alternatives against the SEOs. The provisions of the alternatives are evaluated using compatibility criteria in order to determine how they would be likely to affect the status of the SEOs. The SEOs and the alternatives are arrayed against each other to identify which interactions - if any - would cause effects on specific components of the environment. Where the appraisal identifies a conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for the SEO likely to be affected - in this instance 'to ensure compliance with the Habitats Directive with regard to the protection of Natura 2000 Sites and Annexed habitats and species.

²⁴ SEO HHI

²⁵ SEO CH1 CH2 L1

²⁶ SEOs CH1 CH2

²⁷ SEO L1

²⁸ SEO CH1

²⁹ SEO CH2

³⁰ SEO L1

Table 4.1 Evaluation of Alternatives against SEOs

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs- unlikely to be mitigated	Least Potential Conflict with status of SEOs- likely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	Most Potential Conflict with status of SEOs- likely to be mitigated	No significant interaction with status of SEOs
1. Along existing canal right of way	C1 HH1 P1 W3 M4 CH1 CH2 L1		W1 W2 S1 CH1 CH2 L1	M1 M2 B1 B2 B3		M3
2. Outside of canal right of way	C1 HH1 P1 W3 CH1 CH2 L1			M1 M2 M3 M4 W3 B1 B2 B3 W1 W2 S1 CH1 CH2 L1		
3. Within the River Corridor	C1 HH1 P1 W3 CH1 CH2 L1			M1 M2 M3 M4 W3	B1 B2 B3 W1 W2 S1 CH1 CH2 L1	
4. Outside of the River Corridor	C1 HH1 P1 W3 CH1 CH2 L1			M1 M2 M3 M4 W3 B1 B2 B3 W1 W2 S1	CH1 CH2 L1	
5. Within the Railway right of way	C1 HH1 P1 M4 W3 CH1 CH2 L1		B1 B2 B3 W1 W2 S1 CH1 CH2 L1	M1 M2		M3
6. Outside of the Railway right of way	C1 HH1 P1 W3 CH1 CH2 L1			M1 M2 M3 M4 W3 B1 B2 B3 W1 W2 S1 CH1 CH2 L1		
7. Along road (shared on smaller roads, for shorter distances)	C1 HH1 P1 W3 M4 CH1 CH2 L1		B1 B2 B3 W1 W2 S1 CH1 CH2 L1	M1 M2		M3
8. Along roadside (cycleways)	C1 HH1 P1 W3 M4 CH1 CH2 L1		B1 B2 B3 W1 W2 S1 CH1 CH2 L1	M1 M2		M3
9. Outside of road right of way	C1 HH1 P1 W3 CH1 CH2 L1			M1 M2 M3 M4 W3 B1 B2 B3 W1 W2 S1 CH1 CH2 L1		
10. Tracks on Forestry lands	C1 HH1 P1 W3 M4 CH1 CH2 L1		B1 B2 B3 W1 W2 S1 CH1 CH2 L1	M1 M2		M3
11. Tracks on Peatland lands	C1 HH1 P1 W3 M4 CH1 CH2 L1		W1 W2 S1 CH1 CH2 L1	M1 M2 B1 B2 B3		M3

4.6 Reasons for Choosing the Selected Combination of Routing Alternatives

The Greenway Plan encompasses all of the alternatives considered. Detailed route selection will inform the final project. The evaluation of alternatives will inform the decision-making framework for future projects.

The identification of route corridors and the refinement of the route line is likely to be informed by other considerations such as access to lands, perceptions of safety and attractiveness, costs and benefits and ease of maintenance.

The effects of implementing the selected combination of alternatives are detailed on Table 4.2 overleaf.

By complying with appropriate mitigation measures - including those which have been integrated into the Plan – potentially significant adverse environmental effects which could arise as a result of implementing the Plan would be likely to be avoided, reduced or offset.

Selection of the combination of alternatives has taken into account the evaluation presented in this section.

4.7 Note on Minor Changes made to the Draft Plan after public display, before adoption

Submissions on the Draft Plan resulted in two minor changes to the Draft Plan before adoption (the insertion of the word 'substantial' in two locations). These changes provide clarification and internal consistency within the Draft Plan and would not result in any additional environmental effects to those already foreseen by the SEA of the Draft Plan; they are not considered as being material. Furthermore the selected combination of routing alternatives for the Draft Plan that was identified as part of the SEA process (see above) does not change in any way.

Table 4.2 Effects Arising from the Selected Combination of Alternatives

Environmental Component	Likely Positive effect	Potentially Significant Adverse effect, if unmitigated (these effects will be mitigated)
Air and climatic factors	<ul style="list-style-type: none"> Improvements in air quality and reductions in greenhouse gas emissions resulting from: reduced car usage and increases in levels of cycling and walking Contributions towards climate adaptation and flood risk management arising from the preservation of natural floodplains 	<ul style="list-style-type: none"> None
Material Assets	<ul style="list-style-type: none"> Increases in the use of existing underutilised or disused infrastructure e.g. towpaths and railway lines 	<ul style="list-style-type: none"> The need to provide adequate and appropriate water services (it is the function of Irish Water to provide for such needs) Increases in waste levels
Population and human health	<ul style="list-style-type: none"> Contribution towards the protection of human health as a result of improving the quality in environmental vectors (e.g. improvements in air quality as a result of contributions towards sustainable mobility) 	<ul style="list-style-type: none"> Potential interactions if effects upon environmental vectors such as water are not mitigated
Biodiversity and flora and fauna	<ul style="list-style-type: none"> A visitor management strategy during the implementation of the Greenway project could contribute positively to advancing the attainment of conservation objectives along and adjacent to the route, thereby benefitting the management of designated sites. Continuation of and further contribution towards the protection of biodiversity and flora and fauna Enhancement of ecological connectivity by protecting certain areas from the encroachment of development 	<ul style="list-style-type: none"> Arising from both construction and operation of the greenway and associated facilities/infrastructure: loss of/damage to biodiversity in designated sites, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna Habitat loss, fragmentation and deterioration, including patch size and edge effects Disturbance and displacement of protected species and coastal squeeze Effects in riparian zones where new crossings of waters, if any, are progressed
Water	<ul style="list-style-type: none"> Continuation of and further contribution towards the protection of water resources along greenway route by protecting certain areas from the encroachment of development 	<ul style="list-style-type: none"> Potential interactions with the status of water bodies and entries to the WFD Register of Protected Areas, arising from: <ul style="list-style-type: none"> - Changes in quality, flow and/or morphology at construction stage (including of greenway and associated facilities/infrastructure); and - Increases in outflow at waste water treatment plants as a result of increases in numbers of visitors to settlements along the route. Increase in the risk of flooding
Soil	<ul style="list-style-type: none"> Preservation of hydrogeological and ecological function of the soil resource by protecting certain areas from the encroachment of development 	<ul style="list-style-type: none"> Adverse impacts on the hydrogeological and ecological function of the soil resource as a result of construction of associated facilities/infrastructure
Cultural Heritage	<ul style="list-style-type: none"> Continuation of and further contribution towards the protection from development of cultural heritage structures which are located within and adjacent to the greenway corridor 	<ul style="list-style-type: none"> Potential effects on protected and unknown archaeology and protected architecture arising from construction activities (for both greenway and associated facilities/infrastructure)
Landscape	<ul style="list-style-type: none"> Continuation of and further contribution towards the protection from development of landscape designations which are located within and adjacent to the greenway corridor 	<ul style="list-style-type: none"> Occurrence of adverse visual impacts and conflicts with the appropriate protection of statutory designations relating to the landscape

Section 5 Monitoring Measures

5.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures which will be used in order to monitor the likely and potential significant effects of implementing the Plan.

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

5.2 Indicators and Targets

Monitoring is based around indicators which allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives identified in Section 5 and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) which were identified with regard to the relevant strategic actions.

Table 5.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental effects of implementing the Plan, if unmitigated.

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

5.3 Sources

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the relevant authorities including the planning authorities, the Environmental Protection Agency, the National Parks and

Wildlife Service and the Central Statistics Office.

The output of lower-tier environmental assessment and decision making – including a review of project approvals granted and associated documents – will also be utilised as part of the Monitoring Programme.

Where significant effects - including positive, negative, cumulative and indirect - have the potential to occur as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

5.4 Reporting

A stand-alone Monitoring Report on the significant environmental effects of implementing the Plan will be prepared in advance of the review of the Plan. This report will address the indicators set out below. The Department of Transport, Tourism and Sport is responsible for the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action, in combination with the relevant authorities.

The hierarchy of planning and environmental assessment – including associated environmental monitoring requirements - in which the Dublin to Galway Greenway Plan is situated is noted.

5.5 Thresholds

Thresholds at which corrective action will be considered include:

- Complaints received from statutory consultees regarding avoidable impacts on any environmental components resulting from development which is granted permission under the Plan;
- Court cases taken by the Department of Arts, Heritage and the Gaeltacht

regarding impacts upon archaeological heritage from development which is provided for by the Plan;

- Fish kills directly attributable to development which is provided for by the Plan; and
- The occurrence of flood events which are directly attributable to development which is provided for by the Plan.

Table 5.1 Selected Indicators, Targets and Monitoring Sources

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Air and Climatic Factors	C1: Percentage of population in catchment area travelling to and from work and school by non-mechanical means	C1: To contribute towards an increase in the percentage of the population in catchment area travelling to and from work and school by non-mechanical means	<ul style="list-style-type: none"> CSO Population Data (every c. 5 years)
Material Assets	M1: Number of new developments granted permission under the Greenway Plan and the land use plans of planning authorities which can be adequately and appropriately served with waste water treatment, if required	M1: All new developments granted permission under the Greenway Plan and the land use plans of planning authorities to be connected to and adequately and appropriately served by waste water treatment, if required	<ul style="list-style-type: none"> Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies)
	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	M2: No non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan	<ul style="list-style-type: none"> EPA The Provision and Quality of Drinking Water in Ireland reports (multi-annual) EPA Remedial Action List (every quarter)
	M3: Preparation and implementation of a construction and environmental management plan	M3: For one or more construction and environmental management plans to be prepared and implemented for development of the Greenway project	<ul style="list-style-type: none"> Internal examination of compliance with SEA and lower tier assessment mitigation measures infrastructure (ongoing to project completion)
	M4: Percentage length of the greenway aligned to existing linear infrastructure	M4: To maximise the length of greenway developed along existing linear infrastructure, taking into account other factors such as environmental protection and planning considerations	<ul style="list-style-type: none"> Internal examination of length of greenway developed along existing linear infrastructure (ongoing to project completion)
Population and Human Health	P1: Number of settlements within the greenway's catchment area	P1: To maximise the number of settlements within the greenway's catchment area, taking into account other factors such as environmental protection and planning considerations	<ul style="list-style-type: none"> Internal examination of number of settlements within the greenway's catchment area infrastructure (ongoing to project completion)
	HH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency	HH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	<ul style="list-style-type: none"> Consultations with EPA and Health Service Executive (at monitoring evaluation - see Section 5.4)

SEA Statement for the Dublin to Galway Greenway Plan

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	B1: Maintenance of favourable conservation status for all habitats and species protected under National and International legislation to be unaffected by implementation of the Plan ³¹	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) • Department of Arts, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years) • Department of Arts, Heritage and the Gaeltacht's National Monitoring Report for the Birds Directive under Article 12 (every 3 years) • Consultations with the NPWS (at monitoring evaluation - see Section 5.4)
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for by the Plan	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) • CORINE mapping resurvey (every c. 5 years) • Review of EPA Ecological Network Mapping (if available)
	<p>B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan</p> <p>B3ii: Number of significant impacts on the protection of listed species</p>	<p>B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan</p> <p>B3ii: No significant impacts on the protection of listed species</p>	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) • Consultations with the NPWS (at monitoring evaluation - see Section 5.4)

³¹ 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 to proceed; and
- (c) Adequate compensatory measures in place.

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Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Soil	S1: Soil extent and hydraulic connectivity	S1: To minimise reductions in soil extent and hydraulic connectivity	<ul style="list-style-type: none"> Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies)
Water	W1i: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009) W1ii: Mandatory and Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)	W1i: Not to cause deterioration in the status of any surface water or affect the ability of any surface water to achieve 'good status' ³² by 2015 W1ii: To achieve - as a minimum - Mandatory values and, where possible, to achieve Guide values as set by the EU Bathing Water Directive and transposing Bathing Water Quality Regulations (SI No. 79 of 2008)	<ul style="list-style-type: none"> Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) Data issued under the Water Framework Directive Monitoring Programme for Ireland (multi-annual) EPA <i>The Quality of Bathing Water in Ireland</i> reports
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Not to affect the ability of groundwaters to comply with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	<ul style="list-style-type: none"> Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) Data issued under the Water Framework Directive Monitoring Programme for Ireland (multi-annual).
	W3: Compliance of development of greenway with the Flood Risk Management Guidelines	W3: For all greenway projects to comply with the Flood Risk Management Guidelines	<ul style="list-style-type: none"> Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies)

³² Good status as defined by the WFD equates to approximately the following in the current national schemes of classification as set out by the EPA:

- *Q4* in the biological classification of *rivers*; and
- *Unpolluted status* in the Assessment of Trophic Status of Estuaries and Bays in Ireland (ATSEBI).

SEA Statement for the Dublin to Galway Greenway Plan

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source (Frequency)
Cultural Heritage	CH1: Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and the context of the above within the surrounding landscape where relevant) - protected from significant adverse effects arising from development of the Greenway	CH1: Protect entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and their context of the above within the surrounding landscape where relevant) from significant adverse effects arising from development of the Greenway	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) • Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 5.4)
	CH2: Percentage of entries to the Records of Protected Structures and Architectural Conservation Areas and their context protected from significant adverse effects arising from development of the Greenway	CH2: Protect entries to the Records of Protected Structures and Architectural Conservation Areas and their context from significant adverse effects arising from development of the Greenway	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies) • Consultation with Department of Arts, Heritage and the Gaeltacht (at monitoring evaluation - see Section 5.4)
Landscape	L1: Number of unmitigated conflicts with the appropriate protection of statutory designations relating to the landscape, including those included in the Development Plans of planning authorities	L1: No unmitigated conflicts with the appropriate protection of statutory designations relating to the landscape, including those included in the Development Plans of planning authorities	<ul style="list-style-type: none"> • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant planning authorities (as required, monitoring reports published on various timescales and frequencies)